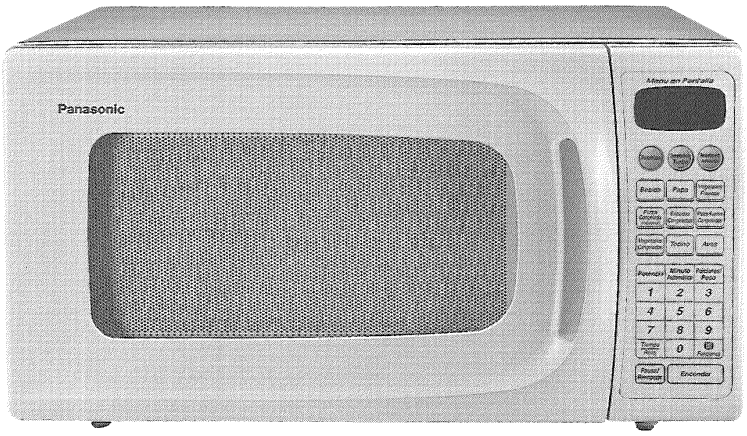
ORDER NO. MMOC9803047C1
E1

# Service Manual

Microwave Oven




| MODELS | MX RPH | LT RPH |
|---|---|---|
| NN-5508L | ○ | ○ |
| NN-5558L | ○ | ○ |
| NN-6508L | ○ | ○ |
| NN-6558L | ○ | ○ |
| NN-7508L | ○ | ○ |
| NN-7558L | ○ | ○ |

**RPH: For Mexican and Latin American Markets:**
**MX - Mexico**
**LT - Latin America**

**Specifications:**

| Models: | NN-5508L, NN-5558L | NN-6508L, NN-6558L | NN-7508L, NN-7558L |
|---|---|---|---|
| Power Source: | 120V AC Single Phase 60Hz | 120V AC Single Phase 60Hz | 120V AC Single Phase 60Hz |
| Power Requirements: | 1500W (13.0A) | 1550W (13.5A) | 1550W (13.5A) |
| Output: (IEC705-88) | 950W | 950W | 950W |
| Microwave Frequency: | 2,450MHz | 2,450MHz | 2,450MHz |
| Timer: | 99 min. 99 sec. | 99 min. 99 sec. | 99 min. 99 sec. |
| Oven Cavity Size | 1.0 cu. ft. | 1.3 cu. ft. | 1.7 cu. ft. |
| Outside Dimensions: | 20" (W) X 14 3/16" (D) X 12" (H)<br>510mm (W) X 360mm (D) X 306mm (H) | 21 7/8" (W) X 16 3/4" (D) X 12" (H)<br>555mm (W) X 425mm (D) X 306mm (H) | 23 7/8" (W) X 16 3/4" (D) X 14" (H)<br>595mm (W) X 425mm (D) X 356mm (H) |
| Inside Dimensions: | 13 7/8" (W) X 13 5/16" (D) X 9" (H)<br>353mm (W) X 338mm (D) X 229mm (H) | 14 15/16" (W) X 15 13/16" (D) X 9 1/8" (H)<br>380mm (W) X 402mm (D) X 232mm (H) | 17 3/16" (W) X 15 9/16" (D) X 10 11/16" (H)<br>437mm (W) X 396mm (D) X 272mm (H) |
| Weight: | 34 lbs/15.3 kg | 38 lbs/17.2 kg | 40 lbs/18 kg |
| Output power: IEC705-88 Test procedure | | | |
| Specifications subject to change without notice | | | |

Panasonic®

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## ⚠ WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product.
Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

**WARNING**

1. This product should be serviced only by trained qualified personnel.
2. Check for radiation leakage before and after every servicing according to the "procedure for measuring radiation leakage".
3. If the unit cannot be repaired on site, advise the customer not to use until the unit can be repaired.
4. There are special components used in the microwave oven which are important for safety. These parts are marked with a ⚠ on the replacement parts list. It is essential that these critical parts should be replaced only with the manufacturer's specified parts to prevent microwave leakage, shock, fire, or other hazards. Do not modify the original design.

This service manual covers products for following markets.
When troubleshooting or replacing parts, please refer to the country identifications shown below for your applicable product specification.
MX . . . . . Mexico
LT . . . . . Latin America

# PRECAUTIONS TO BE OBSERVED BEFORE AND DURING SERVICING TO AVOID POSSIBLE EXPOSURE TO EXCESSIVE MICROWAVE ENERGY

(A) Do not operate or allow the oven to be operated with the door open.
(B) Make the following safety checks on all ovens to be serviced before activating the magnetron or other microwave source, and make repairs as necessary:
  (1) Interlock operation
  (2) Proper door closing
  (3) Seal and sealing surfaces (arcing, wear, and other damage)
  (4) Damage to or loosening of hinges and latches
  (5) Evidence of dropping or abuse
(C) Before turning on the microwave power for any service test or inspection within the microwave generating compartments, check the magnetron, waveguide or transmission line, and cavity for proper alignment, integrity and connections.
(D) Any defective or misadjusted components in the interlock, monitor, door seal, and microwave generation and transmission systems shall be repaired, replaced, or adjusted by procedures described in this manual before the oven is released to the owner.

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# FEATURE CHART

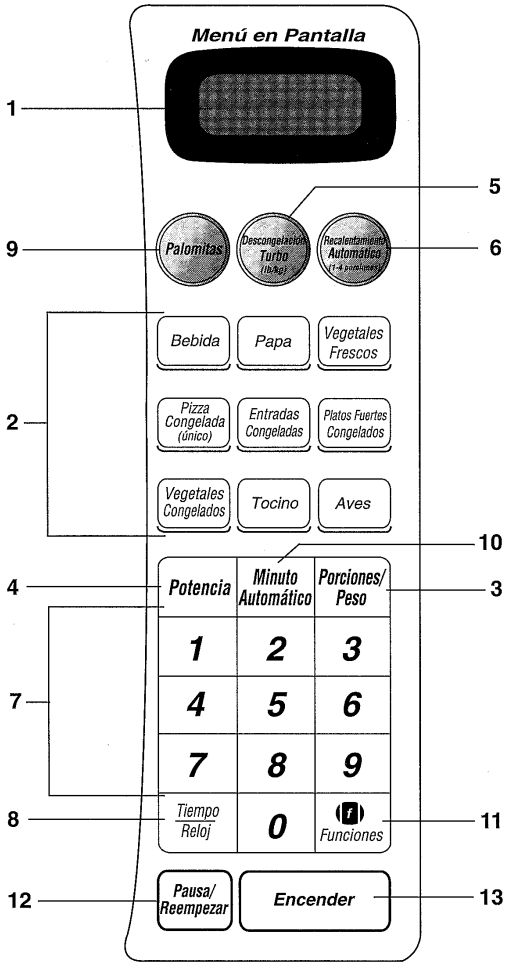
| FEATURES | Models |
|---|---|
| | NN-5508L<br>NN-5558L<br>NN-6508L<br>NN-6558L<br>NN-7508L<br>NN-7558L |
| Three Stage Cooking | ○ |
| Turbo Defrost | ○ |
| Auto Reheat | ○ |
| Auto Cooking Display # | ○ |
| Auto Cooking | ○ |
| Quick Minute | ○ |
| Child Safety Lock | ○ |
| Display Mode Operating Guide | ○ |
| Delay Start | ○ |
| Timer | ○ |
| Digital Clock | ○ |
| Function Key | ○ |

NOTE: The Function Key allows the user to select the following features:

1. Language choice
2. Lb/Kg choice
3. Word speed
4. Menu Action On/Off
5. Child Lock On/Off
6. Beep On/Off
7. Reminder Beep On/Off
8. Daylight Saving On/Off
9. Clock On/Off
10. Demo Mode On/Off

(Refer to Operation on Page 7.)

## NN-5508L, NN-6508L, NN-7508L
## NN-5558L, NN-6558L, NN-7558L




**1 Display Window**
**2 Auto Cook Pads**
**3 Serving Weight Pad**
**4 Power Level Pad**
**5 Turbo Defrost Pad**
**6 Auto Reheat Pad**
**7 Number Pads**
**8 Timer/Clock Pad**
**9 Popcorn Pad**
**10 Quick Minute Pad**
**11 Function Key**
**12 Stop/Reset Pad**

Before cooking: One tap clears your instructions. During cooking: One tap temporarily stops the cooking process. Another tap cancels all your instructions and time of day appears in the display window.

### 13 Start Pad

One tap allows oven to begin functioning. If door is opened or STOP/RESET, PAUSA/REEMPEZAR Pad is pressed once during oven operation, START, ENCENDER Pad must again be pressed to restart oven.

### Word Prompters

When pads are pressed, a beep sound is heard and the corresponding letter or word(s) appear and roll across the window. If a pad is pressed and no beep is heard, the unit does not or cannot accept the instruction. As each pad is pressed the corresponding word(s) roll across the window. Words will automatically appear to prompt the user to perform the next step. It is not necessary to wait for the words to appear before pressing pads for the next step. A two beep sound is heard between stages. At the end of any complete program, the oven will beep five times and "ENJOY YOUR MEAL" will appear in the display window.

# OPERATION AND DIGITAL PROGRAMMER CIRCUIT TEST PROCEDURE

## 1. To Set Clock

| OPERATION | SCROLL DISPLAY |
|---|---|
| 1. Plug the power supply cord into wall outlet. | *WELCOME TO PANASONIC —REFER TO OPERATING INSTRUCTIONS BEFORE USE* :  |
| 2. Press Tiempo/Reloj pad twice. | ✳ ✳ ——SET TIME |
| 3. Enter time of day (TOD) by pressing appropriate Number pads. | 11✳25 ——PRESS CLOCK PAD |
| 4. Press Tiempo/Reloj pad. TOD has now been registered into the digital programmer circuit and will count up by minutes. | 11:25 |

| OPERATION | DISPLAY |
|---|---|
| 5. Set for 1 minute by pressing Number pads. | 1 00 MIN SEC ——PRESS START MEDIUM |
| 6. Press Encender pad. | ↻ 5 sec |
| 7. When 1st stage cooking time has elapsed, oven automatically switches to 2nd stage cooking. | ↻ 1 00 MIN SEC |
| 8. When 2nd stage cooking time has elapsed, oven beeps 5 times and shuts off. | ENJOY YOUR MEAL |

## 2. Time Cooking for Two Stage

| OPERATION | DISPLAY |
|---|---|
| 1. Place a water load in the oven. | |
| 2. Press Potencia pad once to set High power. (1st stage) | HIGH ——SET TIME |
| 3. Set for 5 seconds by pressing Number pad. 5 sec. = 5 | 5 SEC ——PRESS START HIGH |
| 4. Press Potencia pad 4 times to set Medium power. (2nd Stage) | MEDIUM ——SET TIME |

## 3. Auto Weight Defrost

| OPERATION | DISPLAY |
|---|---|
| 1. Press Descongelación Turbo pad. "Lb." and "oz" display will blink. | AUTO DEFROST ——SET WEIGHT |
| 2. Set the weight for 3 pounds by pressing Number pad. 3 lb. = 3 0 0 | 3 00 lb oz ——PRESS START |
| 3. Press Encender pad. NN-5_ _8L → NN-6_ _8L → NN-7_ _8L → | ↻ 20 03 MIN SEC ↻ 20 18 MIN SEC ↻ 20 18 MIN SEC |
| 4. Press Pausa/Reempezar pad twice. Oven shuts off. Time of day or colon appears in the display. | 11:25 |

## 4. Auto Reheat

| OPERATION | SCROLL DISPLAY |
|---|---|
| 1. Press [Recalentamiento Automático] pad twice. | *2 SERV*<br>*——PRESS START* |
| 2. Press [Encender] pad. **NN-5__8L →**<br>**NN-6__8L →**<br>**NN-7__8L →** | ↻ 3 MIN 30 SEC<br>↻ 3 MIN 30 SEC<br>↻ 3 MIN 30 SEC |
| 3. When cooking time has elapsed, Oven beeps 5 times and shuts off. | *ENJOY YOUR MEAL* |

## 5. Popcorn

| OPERATION | SCROLL DISPLAY |
|---|---|
| 1. Press [Palomitas] pad once. | *POPCORN*<br>*3.5 OZ*<br>*—— PRESS START* |
| 2. Press [Encender] pad. **NN-5__8L →**<br>**NN-6__8L →**<br>**NN-7__8L →** | ↻ 2 MIN 40 SEC<br>↻ 2 MIN 20 SEC<br>↻ 3 MIN 00 SEC |
| 3. When cooking time has elapsed, Oven beeps 5 times and shuts off. | *ENJOY YOUR MEAL* |

# Functions

This unique feature of your PANASONIC microwave oven allows you to establish the initial non-cooking features of your oven such as CHILD LOCK, WORD SPEED, LANGUAGE CHOICE (ENGLIGH, SPANISH OR FRENCH), plus many more. See below.

Function

**1** **LANGUAGE CHOICE**
The oven has English, French and Spanish display. The display appears in English when you plug-in.
1 ENGLISH → Display appears in English.
2 FRANCAIS → Display appears in French.
3 ESPANOL → Display appears in Spanish.

**2** **Lb/KG CHOICE**
The oven has both imperial and metric weight measurements. The oven displays the weight in imperial when you plug it in.
1 Lb → Weight can be set in lb/oz.
2 KG → Weight can be set in g/kg.

**3** **WORD SPEED**
The speed of word scrolling in the display window can be quickened or slowed down.
1 QUICK → Words scroll quickly.
2 MEDIUM → Scrolling speed reverts to initial setting.
3 SLOW → Words scroll slowly.

**4** **MENU ACTION ON/OFF**
MENU ACTION SCREEN helps you to program your oven by prompting the next step to be taken. When you become familiar with your oven, the prompting can be turned off.
1 ON → Prompting Guide will reappear.
2 OFF → Prompting Guide will not appear.

**5** **CHILD LOCK ON/OFF**
The oven has Child Safety Lock feature which prevents use by children.
1 ON → Child Lock has been set and operation will not be accepted.
2 OFF → Child Lock has been cancelled.

**6** **BEEP ON/OFF**
If you wish to have the oven operate with no beep, it can be eliminated.
1 ON → Beep sound will activate.
2 OFF → Beep sound will not be heard.

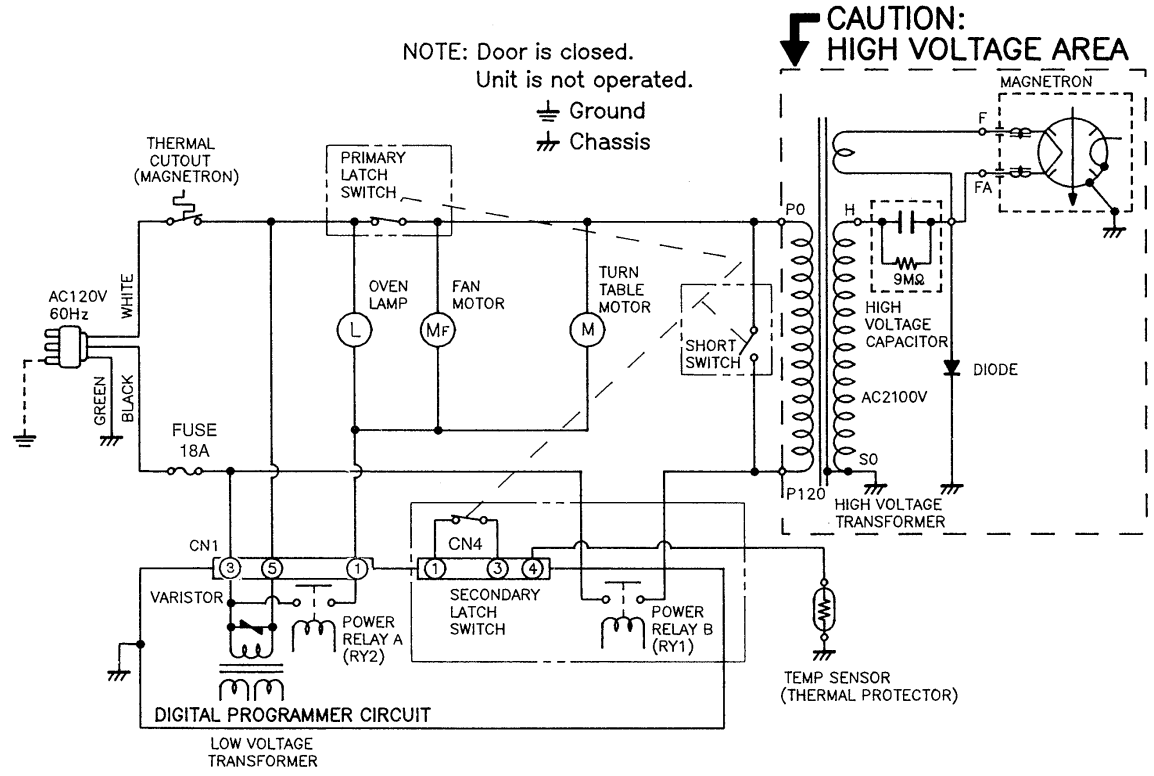
**7** **REMINDER BEEP ON/OFF**
A reminder beep works to remind you to remove the food from the oven after the completion of cooking. It will occur every few seconds.
1 ON → Reminder beep will work.
2 OFF → Reminder beep will not work.

**8** **DAYLIGHT SAVING ON/OFF**
1 ON → Time of day will be on hour fast.
2 OFF → Time of day will revert to original setting.

**9** **CLOCK ON/OFF**
Clock display can be turned off.
1 ON → Clock display will appear in the display window.
2 OFF → Clock display will not appear in the display window.
Time of day will not be lost while the display is off.

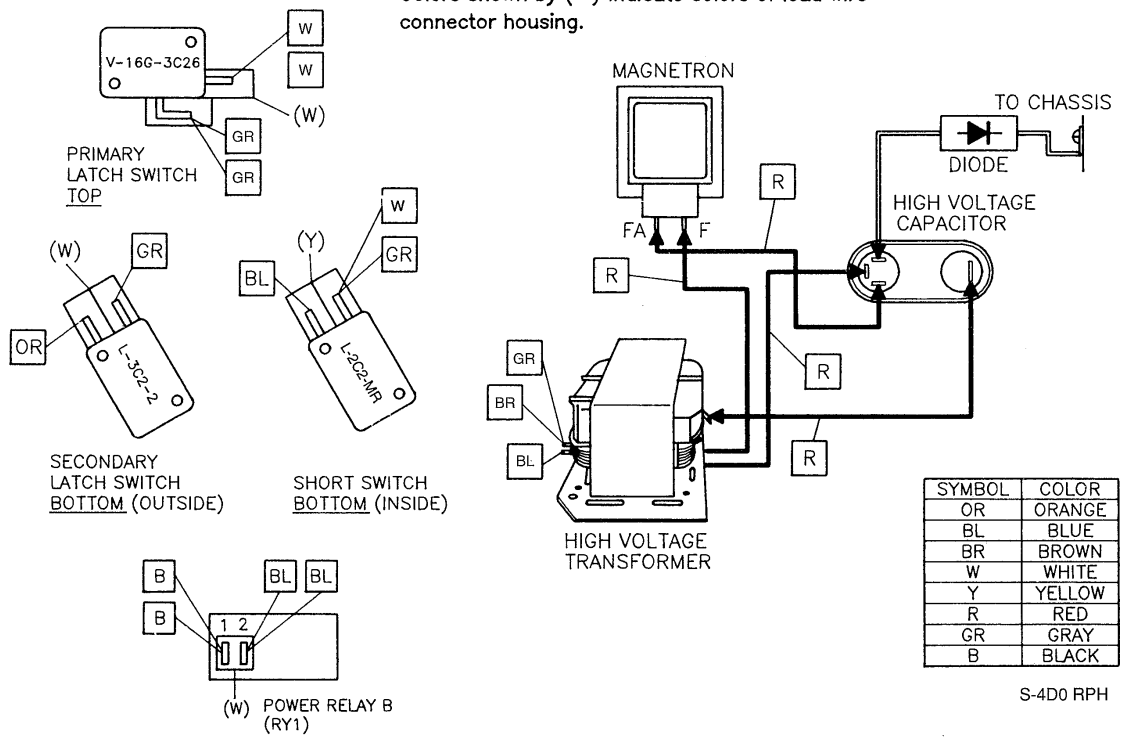
**0** **DEMO MODE ON/OFF**
Demo mode is designed for retail store display. In this mode, the oven can be demonstrated with no power in the oven.
1 ON → The oven will be in demo mode.
2 OFF → The oven will be out of demo mode.

# SCHEMATIC DIAGRAM (RPH)




## WIRING DIAGRAM

NOTE: *When replacing, check the lead wire color as shown.
*Colors shown by ( ) indicate colors of lead wire connector housing.




| SYMBOL | COLOR |
|---|---|
| OR | ORANGE |
| BL | BLUE |
| BR | BROWN |
| W | WHITE |
| Y | YELLOW |
| R | RED |
| GR | GRAY |
| B | BLACK |

S-4D0 RPH

# DESCRIPTION OF OPERATING SEQUENCE

## 1. Variable power cooking control

The coil of power relay B (RY1) is energized intermittently by the digital programmer circuit, when the oven is set at any power selection except for High power position. The digital programmer circuit controls the ON-OFF time of power relay B contacts in order to vary the output power of the microwave oven from "Low" to "High" power. One companies ON and OFF cycle of power relay B is 22 seconds. The relation between indications on the control panel and the output of the microwave oven is as shown in table.

**NOTE: The ON/OFF time ratio does not correspond with the percentage of microwave power since approximately 2 seconds are required for heating of magnetron filament.**

| POWER SETTING | OUTPUT POWER (%) APPROX. | ON-OFF TIME OF POWER RELAY B (RY1) | |
|---|---|---|---|
| | | ON (SEC) | OFF (SEC) |
| HIGH | 100% | 22 | 0 |
| MEDIUM-HIGH | 70% | 17 | 5 |
| MEDIUM | 55% | 13 | 9 |
| MEDIUM-LOW | 30% | 8 | 14 |
| LOW | 10% | 5 | 17 |
| DEFROST | 30% | 8 | 14 |

## 2. Turbo Defrost, Auto Reheat, Auto Cook controls

When these Auto Control features are selected and the Start Pad is tapped:

(A) The digital programmer circuit determines the power level and cooking time to complete cooking and indicates the operating state in the display window. Table shows the corresponding cooking times for respective serving by categories.

(B) When cooking time in the display window has elapsed, the oven turns off automatically by a control signal from the digital programmer circuit.

### Turbo Defrost

| SELECTED WEIGHT | COOKING TIME |
|---|---|
| | NN-5508L<br>NN-5558L |
| 1.0 LB | 6 min. |
| 6.0 LB | 41 min. 08 sec. |

### Auto Reheat

| SELECTED SERVING | COOKING TIME |
|---|---|
| | NN-5508L<br>NN-5558L |
| 1 | 2 min. |
| 2 | 3 min. 30 sec. |
| 4 | 7 min. 30 sec. |

### Auto Cooking

| MENU | SERVING | COOKING TIME |
|---|---|---|
| | | NN-5508L<br>NN-5558L |
| TOCINO | 3 | 3 min. 10 sec. |
| PAPAS | 2 | 8 min. 40 sec. |

## Turbo Defrost

| SELECTED WEIGHT | COOKING TIME |
|---|---|
| | NN-6508L<br>NN-6558L |
| 1.0 LB | 6 min. 05 sec. |
| 6.0 LB | 41 min. 36 sec. |

## Auto Reheat

| SELECTED SERVING | COOKING TIME |
|---|---|
| | NN-6508L<br>NN-6558L |
| 1 | 2 min. 00 sec. |
| 2 | 3 min. 30 sec. |
| 4 | 7 min. 00 sec. |

## Auto Cooking

| MENU | SERVING | COOKING TIME |
|---|---|---|
| | | NN-6508L<br>NN-6558L |
| TOCINO | 3 | 3 min. 30 sec. |
| PAPAS | 2 | 7 min. 30 sec. |

## Turbo Defrost

| SELECTED WEIGHT | COOKING TIME |
|---|---|
| | NN-7508L<br>NN-7558L |
| 1.0 LB | 6 min. 05 sec. |
| 6.0 LB | 41 min. 36 sec. |

## Auto Reheat

| SELECTED SERVING | COOKING TIME |
|---|---|
| | NN-7508L<br>NN-7558L |
| 1 | 2 min. 00 sec. |
| 2 | 3 min. 30 sec. |
| 4 | 7 min. 30 sec. |

## Auto Cooking

| MENU | SERVING | COOKING TIME |
|---|---|---|
| | | NN-7508L<br>NN-7558L |
| TOCINO | 3 | 3 min. 30 sec. |
| PAPAS | 2 | 7 min. 30 sec. |

# CAUTIONS TO BE OBSERVED WHEN TROUBLESHOOTING

Unlike many other appliances, the microwave oven is high-voltage, high-current equipment. Though it is free from danger in ordinary use, extreme care should be taken during repair.

**CAUTION**

Servicemen should remove their watches whenever working close to or replacing the magnetron.

**1. Check the grounding**

Do not operate on a 2-wire extension cord. The microwave oven is designed to be used when grounded. It is imperative, therefore, to make sure it is grounded properly before beginning repair work.

**2. Warning about the electric charge in the high voltage capacitor**

For about 30 seconds after the oven is turned off, an electric charge remains in the high voltage capacitor.
When replacing or checking parts, remove the power plug from the outlet and short the terminal of the high voltage capacitor (terminal of lead wire from diode) to chassis ground with an insulated handle screwdriver to discharge.

**WARNING**

There is high-voltage present, with high-current capabilities in the circuits of the high voltage winding and filament winding of the high voltage transformer. It is extremely dangerous to work on or near these circuits with oven energized.
DO NOT measure the voltage in the high voltage circuit including filament voltage of magnetron.

**WARNING**

Never touch any circuit wiring with your hand nor with an insulated tool during operation.

**3. When parts must be replaced, remove the power plug from the outlet.**

**4. When the 18 Amp fuse is blown due to the operation of short switch:**

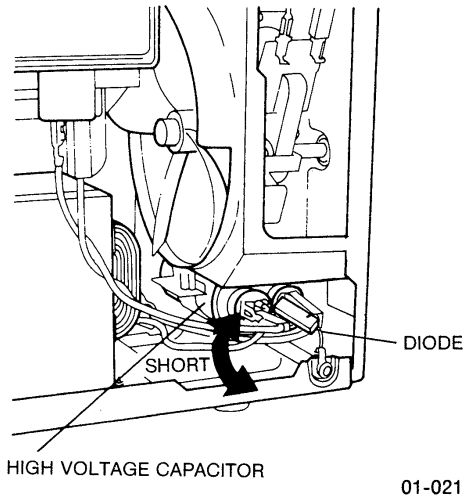
**WARNING**

When the 18 Amp. fuse if blown due to the operation of the short switch, you must replace power relay B, Primary latch switch and the short switch.

(A) This is mandatory. Refer to "Measurements and Adjustments" for these switches.
(B) When replacing the fuse, confirm that it has the appropriate rating for these models.
(C) When replacing faulty switches, be sure mounting tabs are not bent, broken or otherwise deficient in their ability to hold the switches.

**5. Avoid inserting nails, wire, etc. through any holes in the unit during operation.**

Never insert a wire, nail or any other metal object through the lamp holes on the cavity or any other holes or gaps, because such objects may work as an antenna and cause microwave leakage.

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Touch chassis side first then short to the high voltage capacitor terminal.

**6. Confirm after repair**

(A) After repair or replacement of parts, make sure that the screws of the oven, etc. are neither loose nor missing.
Microwaves might leak if screws are not properly tightened.
(B) Make sure that all electrical connections are tight before inserting the plug into the wall outlet.
(C) Check for microwave energy leakage. (Refer to procedure for measuring microwave energy leakage.)

**CAUTION**

**MICROWAVE RADIATION**

DO NOT BECOME EXPOSED TO RADIATION FROM THE MICROWAVE GENERATOR OR OTHER PARTS CONDUCTING MICROWAVE ENERGY.

**IMPORTANT NOTICE**

1. The following components have potentials above 250V while the appliance is operated.
   - ✻ Magnetron
   - ✻ High voltage transformer
   - ✻ High voltage diode
   - ✻ High voltage capacitor

   Pay special attention on these portions.
2. When the appliance is operated with the door hinges or magnetron fixed incorrectly, the microwave leakage can reach more than 5mW/cm$^2$. After repair or exchange, it is very important to check if magnetron and the door hinges are correctly fixed.

# DISASSEMBLY AND PARTS REPLACEMENT PROCEDURE

## 1. Magnetron

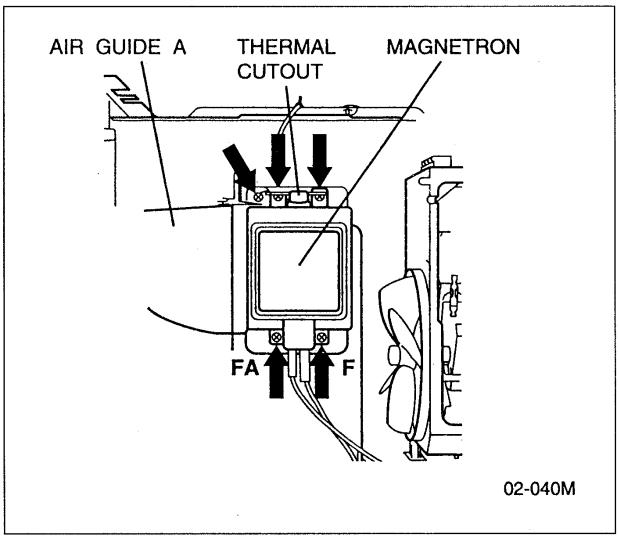
(A) Discharge the high voltage capacitor.
(B) Remove 2 screws holding magnetron thermal cutout.
(C) Remove 1 screw holding air guide A.
(D) Disconnect 2 high voltage lead wires from magnetron filament terminals.
(E) Remove 4 screws holding the magnetron.
NOTE: **After replacement of the magnetron, tighten mounting screws in an X pattern, properly making sure there is no gap between the waveguide and the magnetron to prevent microwave leakage.**

**CAUTION**

When replacing the magnetron, be sure the antenna gasket is in place.

**CAUTION**

When connecting 2 filament lead wires to the magnetron terminals, be sure to connect the lead wires in the correct position. The lead wire of high voltage transformer should be connected to "F terminal" and the lead wire from high voltage capacitor should be connected to "FA terminal".



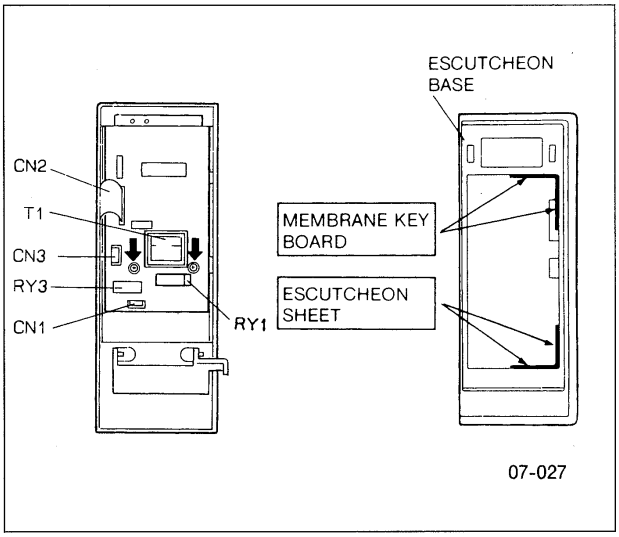

## 2. Digital Programmer Circuit (DPC) and membrane key board.

NOTE: **Be sure to ground any static electric charge built up on your body before handling the DPC.**
(A) Disconnect all connectors from D.P.C.
(B) Remove 1 screw holding escutcheon base and slide the escutcheon base upward slightly.
(C) Release flat cable connector's lock of DPC by pushing both levers to inside and pull them upward, and remove flat cable of membrane key board.
(D) Remove 2 screws holding DPC.

**To replace membrane key board**

(E) Remove escutcheon bracket from escutcheon base by freeing 4 catch hooks on the escutcheon base.
(F) Peel off the tab of membrane key board from escutcheon base.
(G) Peel off the dislpay filter from escutcheon base.
(H) Push the upper part of key board (display window portion) from back of escutcheon base and peel off escutcheon sheet and membrane key board completely from escutcheon base.

NOTE: 1. **The membrane key board is attached to the escutcheon base with double faced adhesive tape. Therefore, applying hot air such as using a hair dryer is recommended for smoother removal.**
2. **When installing new membrane key board, make sure that the surface of escutcheon base is cleaned sufficiently so that any problems (shorted contacts or uneven surface) can be avoided.**
3. **Alignment position of membrane key board is as follows (see figure);**
**Membrane key board: Right and upper edges**
**Escutcheon sheet: Right and lower edges**

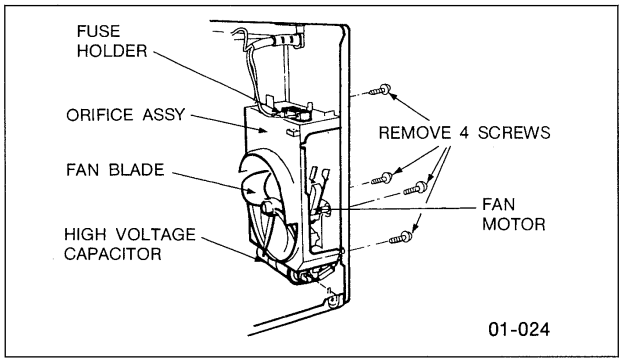



## 3. Low voltage transformer and/or power relays (RY1, RY2)

NOTE: **Be sure to ground any static electric charge built up on your body before handling the DPC.**
(A) Using solder wick or a desoldering tool and 30W soldering iron, carefully remove all solder from the terminal pins of the low voltage transformer and/or power relays.
NOTE: **Do not use a soldering iron or desoldering tool of more than 30 watts on DPC contacts.**
(B) With all the terminal pins cleaned and separated from DPC contacts, remove the defective transformer/power relays and install new transformer/power relays making sure all terminal pins are inserted completely. Resolder all terminal contacts carefully.

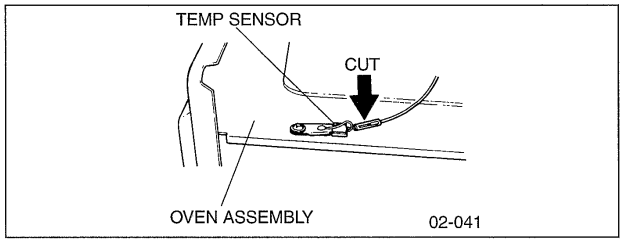
## 4. Fan motor

(A) Disconnect 2 lead wires from fan motor terminals.
(B) Disconnect 2 lead wires from fuse holder terminals.
(C) Disconnect 4 high voltage lead wires from high voltage capacitor terminals.
(D) Remove 4 screws holding fan motor and orifice assy and detach the orifice assy with fan motor from oven assy.
(E) Remove fan blade from the fan motor shaft by pulling it straight out.
(F) Separate the fan motor from the orifice assy by freeing 2 catch hooks on the orifice assy.




## 5. Temp sensor (thermal protector)

(A) Cut a lead wire at the top of sensor terminals.
(B) Remove 1 screw holding the temp sensor and replace with new one.
(C) Solder the lead wires securely to the sensor terminals.

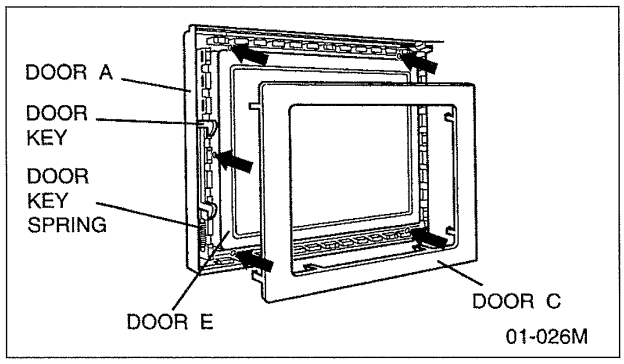


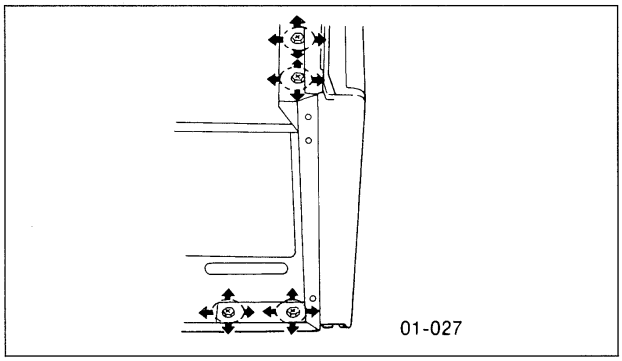

## 6. Door disassembly

(A) Remove door C from door E by carefully pulling outward starting from upper right hand corner using a flat blade screwdriver.
(B) Remove 4 screws (5 screws for 1.7 Models) holding door E to door A to separate door E from door A.
(C) Remove door screen B from door A.
(D) Remove door key and door key spring.

**After replacment of the defective component parts of the door, reassemble it and follow the instructions below for proper installation and adjustment so as to prevent an excessive microwave leakage.**

(1) When mounting the door to the oven, be sure to adjust the door parallel to the bottom line of the oven face plate by moving the upper hinge and lower hinge in the direction necessary for proper alignment.
(2) Adjust so that the door has no play between the inner door surface and oven front surface. If the door assembly is not mounted properly, microwave power may leak from the clearance between the door and oven.
(3) Perform the microwave leakage test.



### 7. Turntable motor

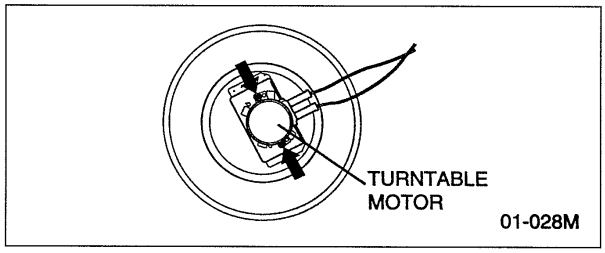
(A) Remove the motor cover by breaking off at the 8 spots indicated by arrows with a cutter or the like. (See Figure)

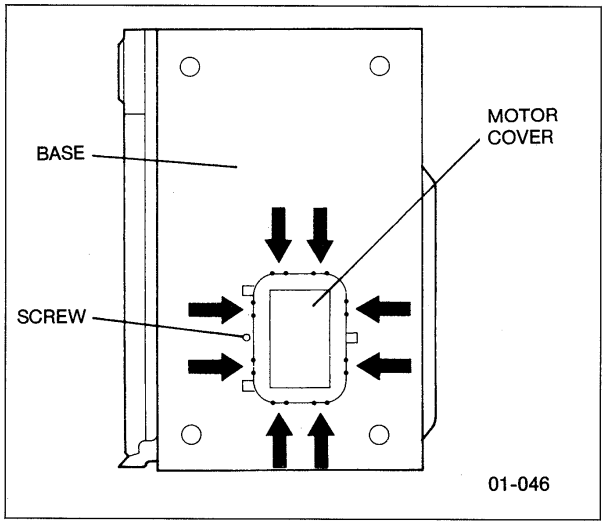
**NOTE: After breaking off the motor cover, make sure that cut-off portions are properly trimmed off or bend to inside so that no sharp edge will expose to outside.**

(B) Disconnect 2 lead wires connected to the turntable motor.

(C) Remove the turntable motor by removing 2 screws.

**NOTE: To reinstall the motor cover, use 4X6 screw.**



# COMPONENT TEST PROCEDURE

**CAUTION**

1. High voltage is present at the high voltage terminal of the high voltage transformer during any cook cycle.
2. It is neither necessary nor advisable to attempt measurement of the high voltage.
3. Before touching any oven components, or wiring, always unplug the oven from its power source and discharge the high voltage capacitor.

**1. Primary Latch Switch, Secondary (Secondary Latch Switch and Power Relay B) Interlocks.**

(A) Unplug the lead connectors to Power Relay B and verify continuity of the power relay B 1-2 terminals.
(B) Unplug lead connectors to Primary Latch Switch and Secondary Latch Switch.
(C) Test the continuity of switches at door opened and closed positions with ohm meter (low scale).
Normal continuity readings should be as follows.

| | Door Opened | Door Closed |
|---|---|---|
| Primary Latch Switch | ∞ Ω (open) | 0 Ω (close) |
| Secondary Latch Switch | ∞ Ω (open) | 0 Ω (close) |
| Power Relay B | ∞ Ω (open) | ∞ Ω (open) |

**2. Short Switch & Monitor Circuit**

(A) Unplug lead wires from H.V. transformer primary terminals.
(B) Connect test probes of ohm meter to the disconnected leads which were connected to H.V. Transformer.
(C) Test the continuity of short switch with door opened and closed positions using lowest scale of the ohm meter.
Normal continuity readings should be as follows.

| Door Opened | Door Closed |
|---|---|
| 0 Ω | ∞ Ω |

**3. High voltage transformer**

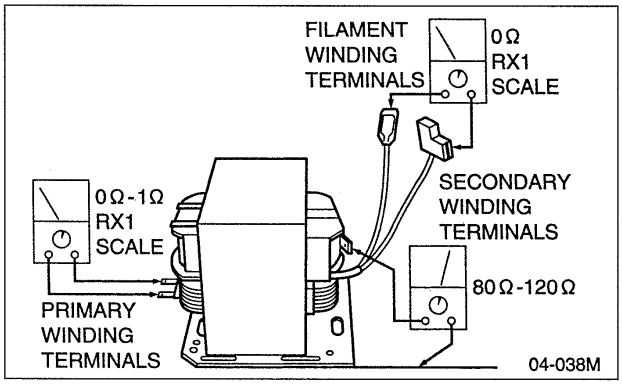
(A) Remove connectors from the transformer terminals and check continuity.
(B) Normal (cold) resistance readings should be as follows:
Secondary winding . . . . . Approx. 80Ω~120Ω
Filament winding . . . . . Approx. 0Ω
Primary winding . . . . . Approx. 0Ω~1Ω

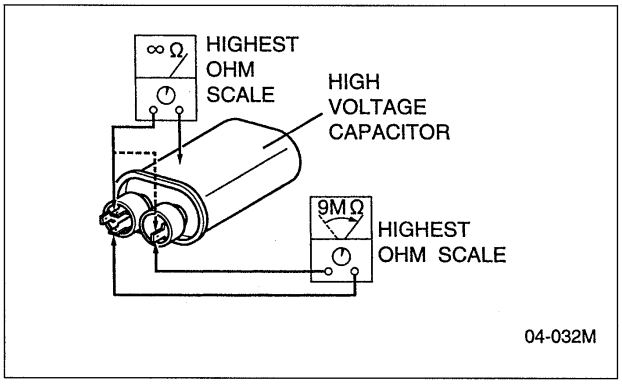
**4. High voltage capacitor**

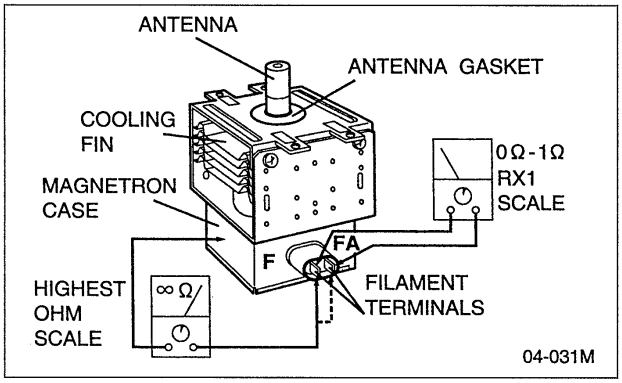
(A) Check continuity of capacitor with meter on highest OHM scale.
(B) A normal capacitor will show continuity for a short time, and then indicate 9MΩ once the capacitor is charged.
(C) A shorted capacitor will show continuous continuity.
(D) An open capacitor will show constant 9MΩ.
(E) Resistance between each terminal and chassis should be infinite.

**5. Magnetron**

Continuity checks can only indicate an open filament or a shorted magnetron. To diagnose for an open filament or shorted magnetron.
(A) Isolate magnetron from the circuit by disconnecting the leads.
(B) A continuity check across magnetron filament terminals should indicate one ohm or less.
(C) A continuity check between each filament terminal and magnetron case should read open.



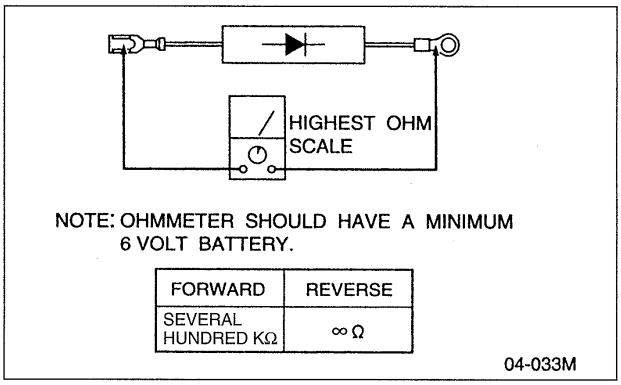



## 6. Diode

(A) Isolate the diode from the circuit by disconnecting the leads.

(B) With the ohmmeter set on the highest resistance scale, measure the resistance across the diode terminals. Reverse the meter leads and again observe the resistance reading. Meter with 6V, 9V or higher voltage batteries should be used to check the front-to-back resistance of the diode, otherwise an infinite resistance may be read in both directions.
A normal diode's resistance will be infinite in one direction and several hundred KΩ in the other direction.

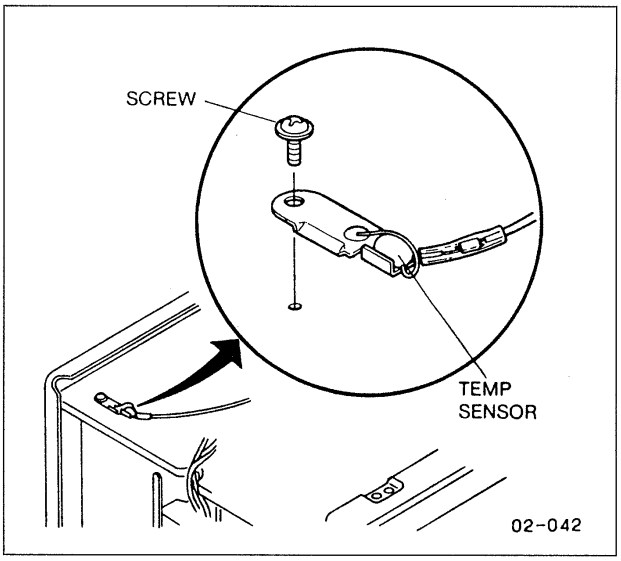



## 7. Membrane key board (Membrane switch assembly)

Check continuity between switch terminals, by tapping an appropriate pad on the key board. The contacts assignment of the respective pads on the key board is as shown in digital programmer circuit.

## 8. Temp sensor (Thermal protector)

A temp sensor is mounted on top of the oven cavity at the left side. Its purpose is to automatically shut off the oven in case the cavity overheats for any reason.
The thermal protector will shut the oven down when the temperature of the cavity reaches 257°F (125°C).
The device is connected to the DPC on touch control models. When the thermal protector exceeds its temperature it will turn off the power to oven cavity and display will go to reset mode.
The cooking program can be reset after cool-down.
THERMISTOR RESISTANCE VALUE
30K-120K at 10°C-30°C (50°F-86°F)



# MEASUREMENTS AND ADJUSTMENTS

**WARNING**

* For continued protection against radiation hazard, replace only with identical replacement parts (For touch models Part No. ANE6142-1450, Type No. V-16G-3C26-M for Primary latch switch; Part No. A61425180AP, Type No. L-3C2-2 for Secondary latch switch; Part No. A61785180AP, Type No. L-2C2-2 for short switch and Part. No. AEG5J1EG12B/AEG5J1EG18B, Type No. G5J-1-TP for power relay B(RY-1))
* When the 18 Amp. fuse is blown due to the operation of the short switch, you must replace power relay B, Primary latch switch and the short switch. Then follow the installation procedures below.
* Interlock switch replacement — In replacing faulty switches, be sure mounting tabs are not bent, broken or otherwise deficient in their ability to hold the switches.
* Refer to schematic diagram to ensure proper connection.

**1. Installation of Primary latch switch, Secondary latch switch and Short switch.**

(A) When mounting Primary latch switch, Secondary latch switch and short switch to door hook assembly, mount the Primary latch switch, the Secondary latch switch and the short switch to the door hook assembly as shown in the illustration.

**NOTE: No specific adjustment during installation of Primary latch switch, Secondary latch switch and short switch to the door hook is necessary.**

(B) When mounting the door hook assembly to the oven assembly, adjust the door hook assembly by moving it in the direction of arrow in the illustration so that the oven door will not have any play in it. Check for play in the door by pulling the door assembly. Make sure that the latch keys move smoothly after adjustment is completed. Completely tighten the screws holding the door hook assembly to the oven assembly.

(C) Reconnect the short switch, Primary & Secondary latch switches and check the continuity of the monitor circuit and all latch switches again by following the components test procedures.

**2. Measurement of microwave output**

The output power of the magnetron can be determined by performing IEC standard test procedures. However, due to the complexity of IEC test procedures, it is recommended to test the magnetron using the simple method outlined below.

Necessary Equipment:

*1 liter beaker *Glass thermometer

*Wrist watch or stopwatch

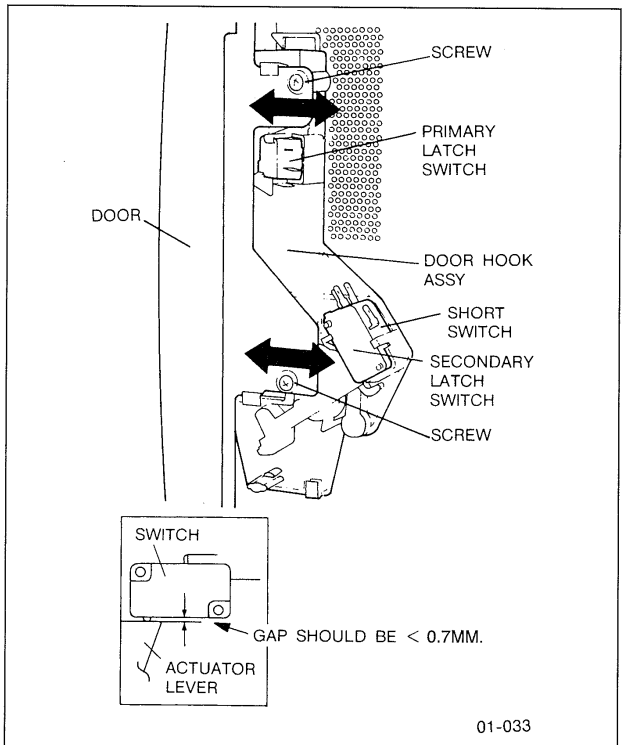
**NOTE: Check the line voltage under load. Low voltage will lower the magnetron output. Take the temperature readings and heating time as accurate as possible.**

(A) Fill the beaker with exactly one liter of tap water. Stir the water using the thermometer and record the beaker's temperature (recorded as T1).

(B) Place the beaker on the center of glass cook plate.
Set the oven for High power and heat it for exactly one minute.

(C) Stir the water again and read the temperature of the beaker (recorded as T2).

(D) The normal temperature rise at High power position for each model is as shown in table.




Please confirm that the gap between the switch housing and switch actuator levers is no more than 0.7 mm when the door is closed.

**TABLE (1ℓ -1min. test)**

| RATED OUTPUT | TEMPERATURE RISE |
|---|---|
| 950W (IEC705-88) | Min. 14.9°F (8.3°C) |

# PROCEDURE FOR MEASURING MICROWAVE ENERGY LEAKAGE

**WARNING**

Check for radiation leakage after every servicing. The leakage Should not be more than 2 mW/cm². After repairing or replacing any radiation safety device, keep a written record for future reference. The leakage reading must be recorded on the service repair ticket while in the customer's home.

**1. Equipment**

*Electromagnetic radiation monitor
*Glass thermometer 212°F or 100°C
*600cc glass beaker

**2. Procedure for measuring radiation leakage.**

*Note before measuring.*

*(1) Do not exceed meter full scale deflection. Leakage monitor should initially be set to the highest scale.*

*(2) To prevent false readings the test probe should be held by the grip portion of the handle only and moved along the shaded area shown in Figure no faster than 1 inch/sec (2.5 cm/sec).*

*(3) Leakage with the outer panel removed ..... less than 5mW/cm².*

*(4) Leakage for a fully assembled oven with door normally closed..... less than 2mW/cm².*

*(5) Leakage for a fully assembled oven [Before the latch switch (primary) is interrupted] while pulling the door..... less than 2mW/cm².*

(A) Pour 275 ± 15cc (9ozs ± 1/2oz) of 20 ±5°C (68 ± 9°F) water in a beaker which is graduated to 600cc, and place in the center of the oven.

(B) Set the radiation monitor to 2450MHz and use it following the manufacturer's recommended test procedure to assure correct results.

(C) When measuring the leakage, always use the 2 inch (5cm) spacer supplied with the probe.

(D) Tap the start pad or set the timer and with the magnetron oscillating, measure the leakage by holding the probe perpendicular to the surface being measured.

**(1) Measurement with the outer panel removed.**

Whenever you replace the magnetron, measure for radiation leakage before the outer panel is installed and after all necessary components are replaced or adjusted. Special care should be taken in measuring around the magnetron.

**WARNING**

Avoid contacting any high voltage parts.

**(2) Measurements with a fully assembled oven.**

After all components, including outer panel are fully assembled, measure for radiation leakage around the door periphery, the door viewing window, the exhaust opening and air inlet openings.

**3. Record keeping and notification after measurement**

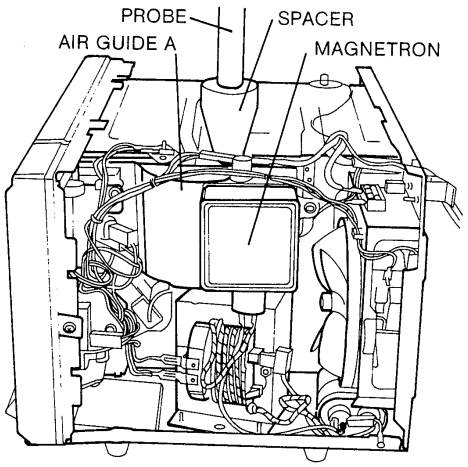
(A) After any adjustment or repair to a microwave oven, a leakage reading must be taken. Record this leakage reading on the repair ticket even if it is zero.

A copy of this repair ticket and the microwave leakage reading should be kept by repair facility.

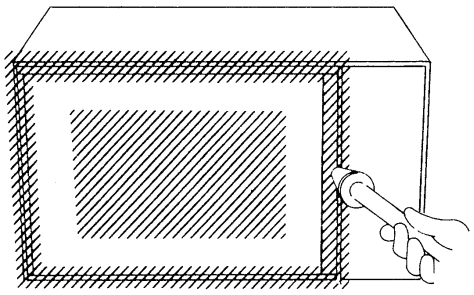
**4. At least once a year, have the radiation monitor checked for calibration by its manufacturer.**

**WARNING**

AVOID CONTACTING ANY HIGH VOLTAGE PARTS.




01-034



01-035

MOVE PROBE ALONG SHADED AREA ( //// ) AROUND EXHAUST OPENINGS (as shown) AND AROUND AIR INLET OPENING

# TROUBLESHOOTING GUIDE

**CAUTION**

1. Ensure proper grounding before checking for trouble.
2. Be careful of the high voltage circuitry, taking necessary precautions when troubleshooting.
3. Discharge high voltage capacitor.
4. When checking the continuity of the switches or the high voltage transformer, disconnect one lead wire from these parts and then check continuity with the AC plug removed. To do otherwise may result in a false reading or damage to your meter.
   When disconnecting a plastic connector from a terminal, you must hold the plastic connector instead of the lead wire and then disconnect it, otherwise lead wire may be open or the connector cannot be removed.
5. Do not touch any parts of the circuitry on the digital programmer circuit, since static electric discharge may damage this control panel.
   Always touch yourself to ground while working on this panel to discharge any static charge in your body.
6. 120V AC is present on the digital programmer circuit (Terminals of power relay's and primary circuit of low voltage transformer).
   When troubleshooting, be cautious of possible electrical shock hazard.

Before troubleshooting, operate the microwave oven following the correct operating procedures in the instruction manual in order to find the exact cause of any trouble, since operator error may be mistaken for the oven's malfunction.

| | SYMPTOM | CAUSE | CORRECTIONS |
|---|---|---|---|
| 1. | Oven is dead.<br>Fuse is OK.<br>No display and no operation at all. | 1. Open or loose lead wire harness.<br>2. Open thermal cutout (Magnetron)<br>3. Open low voltage transformer<br>4. Defective DPC | Check fan motor when thermal cutout is defective. |
| 2. | No display and no operation at all.<br>Fuse is blown. | 1. Shorted lead wire harness<br>2. Defective primary latch switch (NOTE 1)<br>3. Defective short switch (NOTE 1)<br>4. Shorted H.V. Capacitor<br>5. Shorted H.V. Transformer (NOTE 2) | Check adjustment of primary, secondary latch switch and short switch including door. |
| | | NOTE 1: All of these switches must be replaced at the same time. (Refer to adjustment instructions.) Check continuity of power relay B's contacts (between 1 and 2) and if it has continuity, replace power relay B also.<br>NOTE 2: When H.V. Transformer is replaced, check diode and magnetron also. | |
| 3. | Oven does not accept key input (Program). | 1. Key input is not in sequence<br>2. Open or loose connection of membrane key pad to DPC (Flat cable)<br>3. Shorted or open membrane key board<br>4. Defective DPC | Refer to operation procedure.<br><br>Refer to DPC troubleshooting. |
| 4. | Oven lamp and fan motor turn on when oven is plugged in with door closed. | 1. Misadjustment or loose wiring of secondary latch switch<br>2. Defective secondary latch switch | Adjust door and latch switches. |
| 5. | Timer starts countdown but no microwave oscillation.<br>(No heat while oven lamp and fan motor turn on) | 1. Off-alignment of latch switches<br>2. Open or loose connection of high voltage circuit especially magnetron filament circuit<br>NOTE: Large contact resistance will bring lower magnetron filament voltage and cause magnetron to lower output and/or be intermittent<br>3. Defective high voltage component<br>H.V. Transformer<br>H.V. Capacitor<br>H.V. Diode<br>Magnetron<br>4. Open or loose wiring of power relay B<br>5. Defective primary latch switch<br>6. Defective power relay B or DPC | Adjust door and latch switches.<br><br>Check high voltage component according to component test procedure and replace if it is defective.<br><br>Refer to DPC troubleshooting |

| | SYMPTOM | CAUSE | CORRECTIONS |
|---|---|---|---|
| 6. | Oven can program but timer does not start countdown. | 1. Open or loose wiring of secondary latch switch<br>2. Off-alignment of secondary latch switch<br>3. Defective secondary latch switch | Adjust door and latch switches. |
| 7. | Microwave output is low.<br>Oven takes longer time to cook food. | 1. Decrease in power source voltage<br>2. Open or loose wiring of magnetron filament circuit. (Intermittent oscillation)<br>3. Aging change of magnetron | Consult electrician |
| 8. | Fan motor and oven lamp turn on when door is opened. | 1. Shorted primary latch switch | |
| 9. | Oven does not operate and return to plugged in mode. | 1. Open or loose wiring of temp sensor<br>2. Defective temp sensor<br>3. Defective DPC | Check tighten screws on escutcheon base bracket, D.P.C. board and temp sensor. |
| 10. | Loud buzzing noise can be heard. | 1. Loose fan and fan motor<br>2. Loose screws on H.V. Transformer<br>3. Shorted H.V. Diode | |
| 11. | Turntable motor does not rotate. | 1. Open or loose wiring of turntable motor<br>2. Defective turntable motor | |
| 12. | Oven stops operation during cooking. | 1. Open or loose wiring of primary and secondary latch switch<br>2. Operation of thermal cutout (Magnetron) | Adjust door and latch switches. |

## Trouble Related to Digital Programmer Circuit

| SYMPTOM | STEP | CHECK | RESULT | CAUSE/CORRECTIONS |
|---|---|---|---|---|
| No display when oven is first plugged in.<br><br>Oven is dead. | 1 | Fuse pattern of DPC | Normal | STEP 2 |
| | | | Open (NOTE) | Shorted Circuit of ZNR, L.V.T., Oven Lamp etc. Replace DPC |
| | 2 | Low voltage transformer (LVT) secondary voltage | Abnormal 0V | LVT |
| | | | Normal | → Step 3 |
| | 3 | IC-1 pin 1 voltage (Emitter of Q1) | Abnormal | ZD1, Q1 |
| | | | Normal = 5V | → Step 4 |
| | 4 | IC-1 pin 27 voltage (14 pin of IC-2) | Abnormal | IC-2 |
| | | | Normal | → IC-1, CX1 |

NOTE

Procedure of fuse pattern repairing is as follows:

1. When the fuse pattern (PF2) opens.

(1) Remove the jumper wire (PF1).

(2) Insert the removed jumper wire (PF1) to "(PF2)" position and solder it. If both "PF1" and "PF2" fuse patterns are open, please replace DPC.

2. When the fuse pattern (PF4) opens.

(1) Remove the jumper wire (PF3).

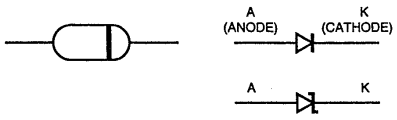
(2) Insert the removed jumper wire (PF3) to "(PF4)" position and solder it. If both "PF3" and "PF4" fuse patterns are open, please replace DPC.

NOTE:* At the time of these repairs, make visual inspection of the varistor for burning damage and examine the transformer with tester for the presence of layer short-circuit (check primary coil resistance).
If any abnormal condition is detected, replace the defective parts.

| SYMPTOM | STEP | CHECK | RESULT | CAUSE/CORRECTIONS |
|---|---|---|---|---|
| No key input | 1 | Membrane switch continuity | Abnormal | Membrane switch |
| | | | Normal | IC-1 |
| No beep sound | 1 | IC-1 pin 23 voltage | Abnormal | IC-1 |
| | | | Normal | BZ, Q6 |
| Power relay A(RY-2) does not turn on even though the program has been set and the start pad is tapped | 1 | IC-1 pin 8 voltage while operation | Abnormal | IC-1, |
| | | | Normal = 5V | → Step 2 |
| | 2 | Short circuit between pin 1 and pin 12 of IC-2 | Still not turn on | RY-2 |
| | | | RY-2 turns on | IC-2 |
| No microwave oscillation at any power setting | 1 | IC-1 pin 5 and pin 15 voltages while operation at high power | Abnormal | IC-1 |
| | | | Normal 5---5V, 15---5V | → Step 2 |
| | 2 | Q2 translator | Abnormal | Q2 |
| | | | Normal | IC-2, RY-1 |
| Dark or unclear display | 1 | Replace display and check operation | Normal | DISPLAY |
| | | | Abnormal | IC-1 |
| Missing or lighting of unnecessary segment | 1 | Replace IC-1 and check operation | Normal | IC-1 |
| | | | Abnormal | DISPLAY |

# HOW TO CHECK THE SEMICONDUCTORS USING AN OHM METER

**Diode**



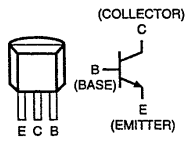

| | FORWARD | REVERSE |
|---|---|---|
| A-K | SMALL | ∞ |

**Transistor**

**NPN Transistor**

**2SC·····**

**2SD·····**

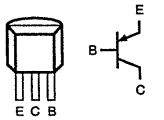



| | FORWARD | REVERSE |
|---|---|---|
| B-E | SMALL | ∞ |
| B-C | SMALL | ∞ |
| C-E | ∞ | ∞ |

**PNP Transistor**

**2SA·····**

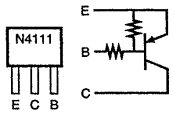
**2SB·····**




| | FORWARD | REVERSE |
|---|---|---|
| E-B | SMALL | ∞ |
| C-B | SMALL | ∞ |
| C-E | ∞ | ∞ |

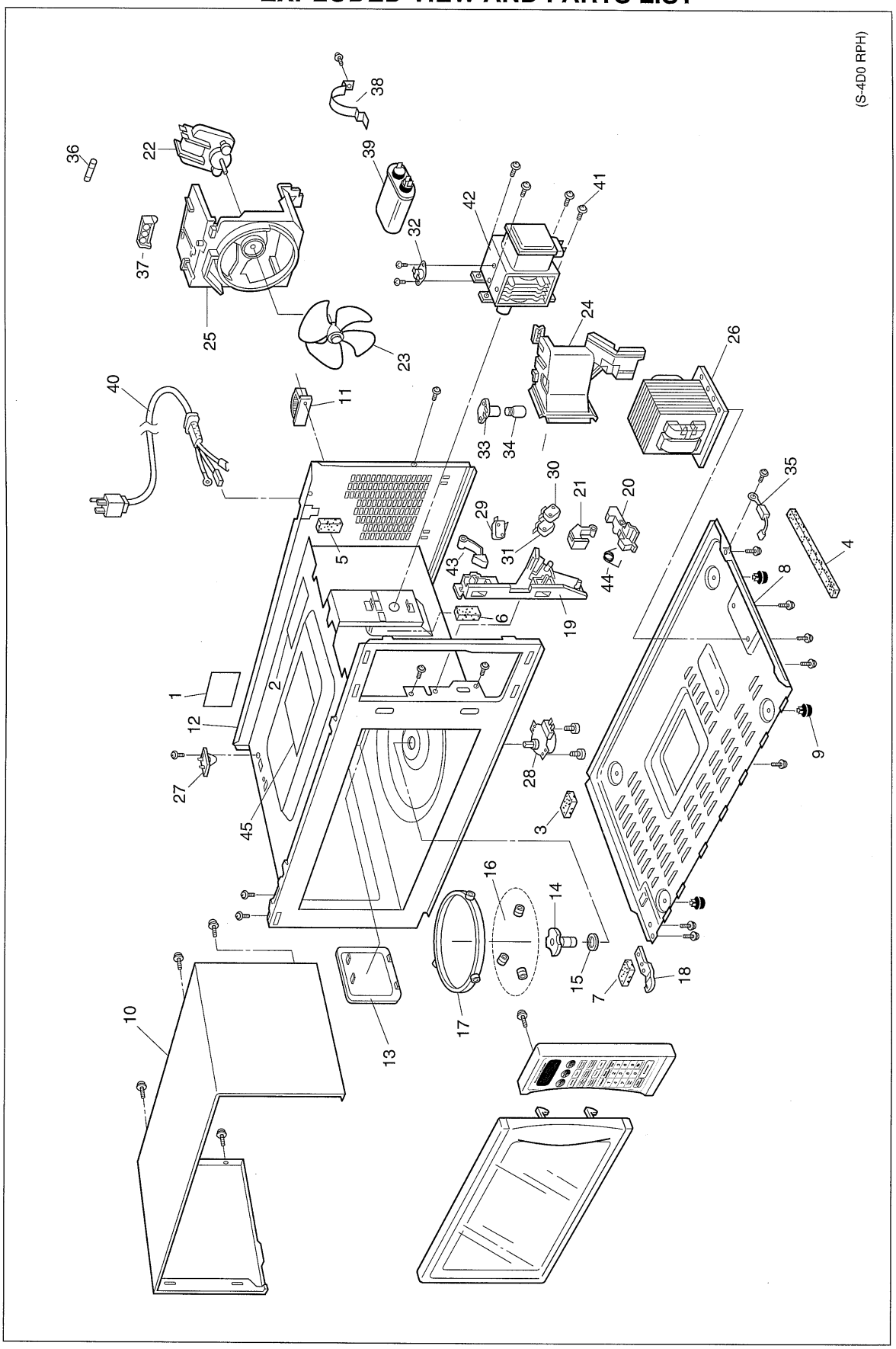
**Digital Transistor**

**PNP Transistor**




| | FORWARD | REVERSE |
|---|---|---|
| E-B | 10kΩ~30kΩ | 10kΩ~30kΩ |
| C-B | 50kΩ~90kΩ | ∞ |
| C-E | 40kΩ~80kΩ | ∞ |

# EXPLODED VIEW AND PARTS LIST



# PARTS LIST

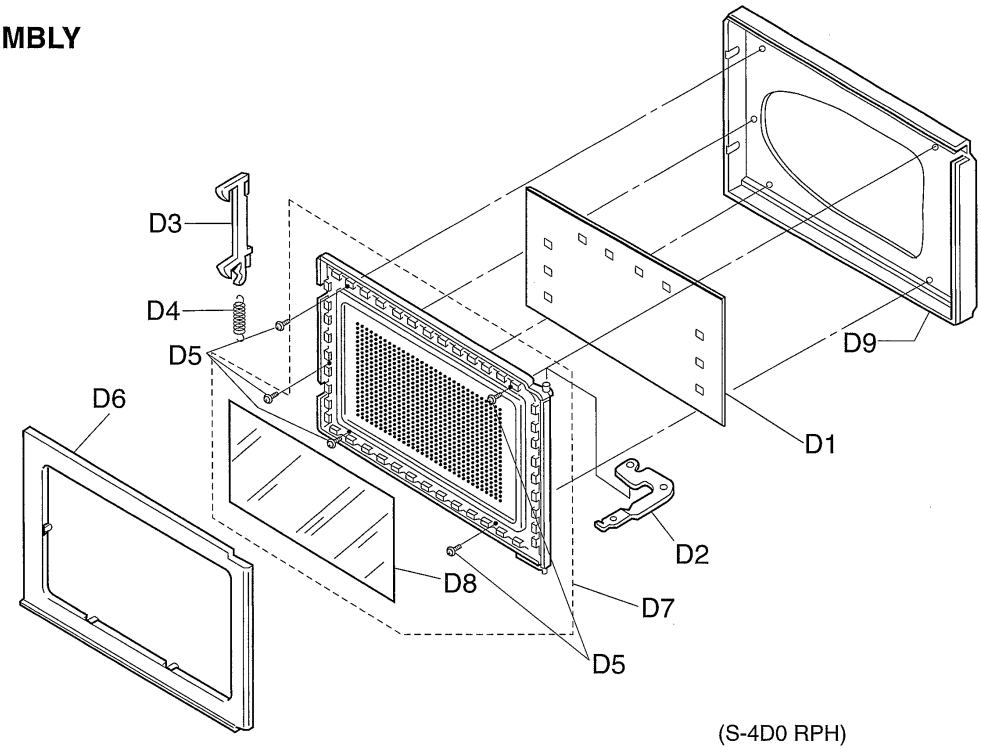
NOTES:
- When ordering replacement part(s), please use part number(s) shown in this parts list. Do not use description of the part.
- Important safety notice: Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.
- Items marked * supplied by MMOC (MAC). (U.S.A.)
- Items marked # are new Part No's. for Pre I.G. (Initial Guidance) list.

| Ref.No. | | Part No. | Part Name & Description | Pcs/Set | Remarks |
|---|---|---|---|---|---|
| *1 | | B00066260AP | CAUTION LABEL | 1 | |
| *2 | | B00338290AP | FUSE LABEL | 1 | |
| *3 | | AMQ0902000BA | CUSHION RUBBER A | 1 | NN-6508L, NN-6558L, NN-7508L, NN-7558L |
| *4 | | AMQ0902000AH | CUSHION RUBBER A | 1 | |
| *5 | | AMQ0902000FD | CUSHION RUBBER A | 1 | |
| *6 | | AMQ0908000AE | CUSHION RUBBER A | 1 | NN-6508L, NN-6558L |
| *7 | | AMQ0904000BB | CUSHION RUBBER A | 1 | NN-6508L, NN-6558L |
| *8 | | B10018250AP | BASE | 1 | NN-5508L, NN-5558L |
| *8 | | B10018640AP | BASE | 1 | NN-6508L, NN-6558L |
| *8 | | B10018290AP | BASE | 1 | NN-7508L, NN-7558L |
| *9 | | B10088250AP | RUBBER FOOT | 4 | |
| *10 | | B10097250AP | CABINET BODY / 1.0 BLACK | 1 | NN-5508L |
| *10 | | B10097250HAP | CABINET BODY / 1.0 WHITE | 1 | NN-5558L |
| *10 | | B10097650AP | CABINET BODY / 1.3 BLACK | 1 | NN-6508L |
| *10 | | B10097650HAP | CABINET BODY / 1.3 WHITE | 1 | NN-6558L |
| *10 | | B10097600AP | CABINET BODY / 1.7 BLACK | 1 | NN-7508L |
| *10 | | B10097600HAP | CABINET BODY / 1.7 WHITE | 1 | NN-7558L |
| *11 | | B11408760AP | STOPPER A | 1 | |
| *12 | ⚠ | B200A8340AP | OVEN | 1 | NN-5508L, NN-5558L |
| *12 | ⚠ | B200A9340AP | OVEN | 1 | NN-6508L, NN-6558L |
| *12# | ⚠ | B200A4A00AP | OVEN | 1 | NN-7508L, NN-7558L |
| *13 | | B20557000AP | CEILING COVER WHITE | 1 | |
| *14 | | B21315540AP | PULLEY SHAFT | 1 | |
| *15 | | B21777050AP | WASHER | 1 | |
| *16 | | B202K4650AP | ROLLER B (U) | 1 | NN-5508L, NN-5558L, NN-7508L, NN-7558L (NOTE 1) |
| *16 | | B202K9330AP | ROLLER B (U) | 1 | NN-6508L, NN-6558L, (NOTE 1) |
| *17 | | B290D8940AP | ROLLER RING (U) | 1 | NN-5508L, NN-5558L |
| *17 | | B290D9330AP | ROLLER RING (U) | 1 | NN-6508L, NN-6558L |
| *17 | | B290D5500AP | ROLLER RING (U) | 1 | NN-7508L, NN-7558L |
| *18 | ⚠ | B30077050AP | LOWER HINGE (B) | 1 | NN-5508L, NN-5558L, NN-6508L, NN-6558L |
| *18 | ⚠ | B30077600AP | LOWER HINGE (B) | 1 | NN-7508L, NN-7558L |
| *19 | ⚠ | B3020-1480 | DOOR HOOK A | 1 | |
| *20 | | B3137-1480 | HOOK SPACER B | 1 | |
| *21 | | B3138-1480 | HOOK SPACER C | 1 | |
| *22 | | 2Z-9D0A.S | FAN MOTOR | 1 | NN-5508L, NN-5558L, NN-6508L, NN-6558L (24W, AC, SINGLE PHASE) |
| *22 | | B400A7000AP | FAN MOTOR | 1 | NN-7508L, NN-7558L, (24W, AC, SINGLE PHASE) |
| *23 | | B40086260AP | FAN BLADE | 1 | NN-5508L, NN-5558L, NN-7508L, NN-7558L |
| *23 | | B40085950AP | FAN BLADE | 1 | NN-6508L, NN-6558L |
| *24 | | B40259390AP | AIR GUIDE A | 1 | |
| *25 | | B41448250AP | ORIFICE / 1.0 | 1 | NN-5508L, NN-5558L |
| *25 | | B41447630AP | ORIFICE / 1.3 | 1 | NN-6508L, NN-6558L |
| *25 | | B41447600AP | ORIFICE / 1.7 | 1 | NN-7508L, NN-7558L |
| *26 | ⚠ | B600B7640AP | H.V. TRANSFORMER | 1 | NN-5508L, NN-5558L (1.5KVA) |
| *26 | ⚠ | B621C8320AP | H.V. TRANSFORMER | 1 | NN-6508L, NN-6558L, NN-7508L, NN-7558L, (1.5KVA) |
| *27 | | A601L5180AP | TEMP SENSOR | 1 | |
| *28 | | B63264080AP | TURNTABLE MOTOR | 1 | (3W) |
| *29 | ⚠ | ANE6142-1450 | MICRO SWITCH | 1 | (V-16G-3C26-M) PRIMARY LATCH SWITCH |
| *30 | ⚠ | A61425180AP | MICRO SWITCH | 1 | (L-3C2-2) SECONDARY LATCH SWITCH |
| *31 | ⚠ | A61785180AP | MICRO SWITCH | 1 | (L-2C2-2) SHORT SWITCH |
| *32 | ⚠ | B61456210AP | THERMAL CUTOUT | 1 | |
| *33 | ⚠ | B61524740AQ | SOCKET | 1 | |
| *34 | | B60304740AQ | INCANDESCENT LAMP | 1 | NN-5508L, NN-5558L |

| Ref.No. | | Part No. | Part Name & Description | Pcs/Set | Remarks |
|---|---|---|---|---|---|
| *34 | | B60307080AP | INCANDESCENT LAMP | 1 | NN-6508L, NN-6558L, NN-7508L, NN-7558L |
| *35 | ⚠ | A62024000AP | DIODE, SI | 1 | |
| *36 | ⚠ | B62308250AP | FUSE | 1 | (18A) |
| *37 | | B62314000AP | FUSE HOLDER | 1 | |
| *38 | | B61884060AP | CAPACITOR BRACKET | 1 | |
| *39 | ⚠ | B63907050AP | H.V. CAPACITOR | 1 | (1.0uf. AC2100V) |
| *40 | ⚠ | B900C9390AP | AC CORD W/PLUG | 1 | (120V) |
| *41 | | XTT4+8B | SCREW | 4 | (4X8) FOR MAGNETRON |
| *42 | ⚠ | 2M210-M1F1 | MAGNETRON | 1 | |
| *43 | | B3136-1480 | HOOK SPACER A | 1 | |
| *44 | | J3097-1480 | LATCH SPRING | 1 | |
| *45 | | B03478250AP | COVER SHEET | 1 | |
| * | | B08878640AP | CABINET BODY TOUCH-UP PAINT (BLACK) | 1 | BOTTLE WITH BRUSH, FOR REPAIR OF PAINTED CABINET BODY |
| * | | B08878640HAP | CABINET BODY TOUCH-UP PAINT (WHITE) | | BOTTLE WITH BRUSH, FOR REPAIR OF PAINTED CABINET BODY |
| * | | B0887705AAP | CAVITY SPRAY PAINT | 1 | SPRAY CAN, FOR REPAIR OF PAINTED OVEN CAVITY |
| * | | B0887700AAP | CAVITY TOUCH-UP PAINT | 1 | BOTTLE WITH BRUSH, FOR REPAIR OF PAINTED OVEN CAVITY |

NOTE 1: When ordering the roller B assy, three rollers will be shipped.
When replacing the roller B, three rollers should be replaced at the same time.
Otherwise the glass cooking tray may not turn smoothly.

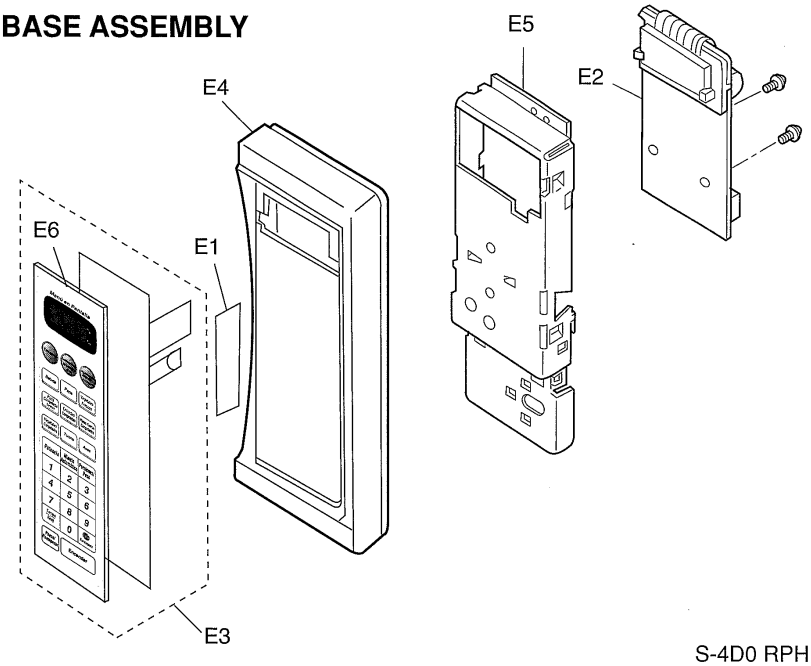
## DOOR ASSEMBLY




(S-4D0 RPH)

| Ref.No. | | Part No. | Part Name & Description | Pcs/Set | Remarks |
|---|---|---|---|---|---|
| *D1# | ⚠ | B31464C40APH | DOOR SCREEN B / 1.0 | 1 | NN-5508L |
| *D1# | ⚠ | B31469410HAP | DOOR SCREEN B / 1.0 | 1 | NN-5558L |
| *D1# | ⚠ | B31464D20CPH | DOOR SCREEN B / 1.3 | 1 | NN-6508L |
| *D1# | ⚠ | B31469330HAP | DOOR SCREEN B / 1.3 | 1 | NN-6558L |
| *D1# | ⚠ | B31464D00CPH | DOOR SCREEN B / 1.7 | 1 | NN-7508L |
| *D1# | ⚠ | B31464A00HAP | DOOR SCREEN B / 1.7 | 1 | NN-7558L |
| *D2 | ⚠ | B30067050AP | UPPER HINGE (A) | 1 | NN-5508L, NN-5558L, NN-6508L, NN-6558L |
| *D2 | ⚠ | B30067600AP | UPPER HINGE (A) | 1 | NN-7508L, NN-7558L |
| *D3 | | B3018-1480 | DOOR KEY A | 1 | |
| *D4 | | B30214000AP | DOOR KEY SPRING | 1 | |
| *D5# | | XTW3+6Q | SCREW | 4 | NN-5508L, NN-5558L, NN-6508L, NN-6558L |
| *D5# | | XTW3+6Q | SCREW | 5 | NN-7508L, NN-7558L |
| *D6 | ⚠ | B30858340AP | DOOR C / 1.0 BLACK | 1 | NN-5508L |
| *D6 | ⚠ | B30858340HAP | DOOR C / 1.0 WHITE | 1 | NN-5558L |
| *D6 | ⚠ | B30858640AP | DOOR C / 1.3 BLACK | 1 | NN-6508L |
| *D6 | ⚠ | B30858640HAP | DOOR C / 1.3 WHITE | 1 | NN-6558L |
| *D6 | ⚠ | B30858290AP | DOOR C / 1.7 BLACK | 1 | NN-7508L |
| *D6 | ⚠ | B30858290HAP | DOOR C / 1.7 WHITE | 1 | NN-7558L |
| *D7# | ⚠ | B302K8340QP | DOOR E (U) / 1.0 BLACK | 1 | NN-5508L |
| *D7# | ⚠ | B302K8340HQP | DOOR E (U) / 1.0 WHITE | 1 | NN-5558L |
| *D7# | ⚠ | B302K9390QP | DOOR E (U) / 1.3 BLACK | 1 | NN-6508L |
| *D7# | ⚠ | B302K9390HQP | DOOR E (U) / 1.3 WHITE | 1 | NN-6558L |
| *D7# | ⚠ | B302K8290QP | DOOR E (U) / 1.7 BLACK | 1 | NN-7508L |
| *D7# | ⚠ | B302K8290HQP | DOOR E (U) / 1.7 WHITE | 1 | NN-7558L |
| *D8 | ⚠ | B31457200AP | DOOR SCREEN A / 1.0 | 1 | NN-5508L, NN-5558L |
| *D8 | ⚠ | B31457050AP | DOOR SCREEN A / 1.3 | 1 | NN-6508L, NN-6558L |
| *D8# | ⚠ | B31459310AP | DOOR SCREEN A / 1.7 | 1 | NN-7508L, NN-7558L |
| *D9# | ⚠ | B301A4C00AP | DOOR A (U) / 1.0 BLACK | 1 | NN-5508L |
| *D9# | ⚠ | B301A4C40HAP | DOOR A (U) / 1.0 WHITE | 1 | NN-5558L |
| *D9# | ⚠ | B301A4B00AP | DOOR A (U) / 1.3 BLACK | 1 | NN-6508L |
| *D9# | ⚠ | B301A4D20HCP | DOOR A (U) / 1.3 WHITE | 1 | NN-6558L |
| *D9# | ⚠ | B301A4A00AP | DOOR A (U) / 1.7 BLACK | 1 | NN-7508L |
| *D9# | ⚠ | B301A4D00HCP | DOOR A (U) / 1.7 WHITE | 1 | NN-7558L |

## ESCUTCHEON BASE ASSEMBLY

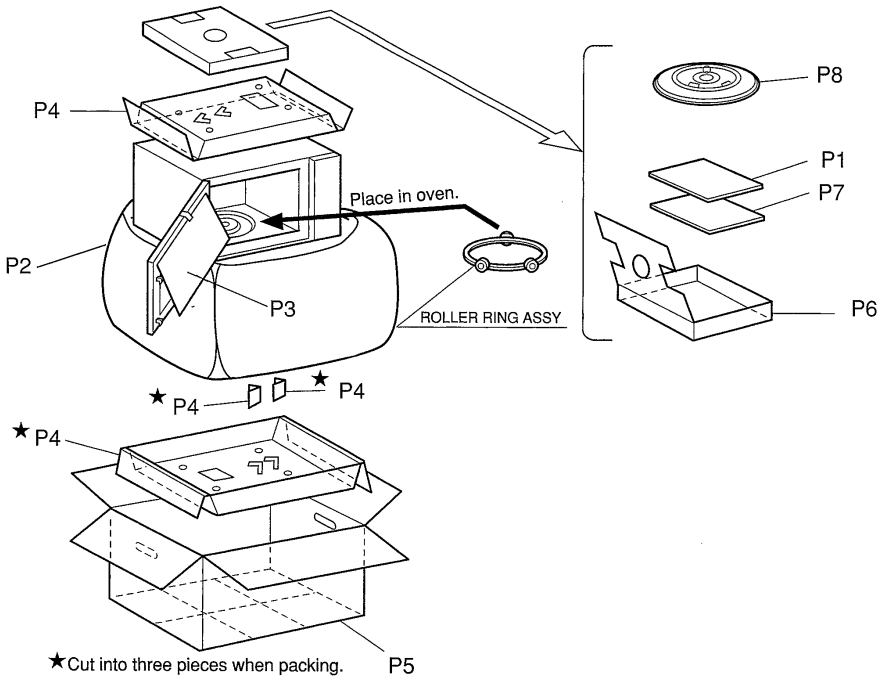



S-4D0 RPH

| Ref.No. | | Part No. | Part Name & Description | Pcs/Set | Remarks |
|---|---|---|---|---|---|
| *E1 | | B00078640RP | NAME PLATE | 1 | |
| *E2# | | B603L4D50RP | D.P.CIRCUIT (U) | 1 | NN-5508L, NN-5558L RTL (W/COMPONENT) |
| *E2# | | B603L4D20RP | D.P. CIRCUIT (U) | 1 | NN-6508L, NN-6558L RTL (W/COMPONENT) |
| *E2# | | B603L4D00RP | D.P.CIRCUIT (U) | 1 | NN-7508L, NN-7558L RTL (W/COMPONENT) |
| *E3# | | B630Y4D20RP | MEMBRANE SWITCH (U) | 1 | NN-5508L, NN-6508L (W/ESCUTCHEON SHEET) |
| *E3# | | B630Y4D20HRP | MEMBRANE SWITCH (U) | 1 | NN-5558L, NN-6558L (W/ESCUTCHEON SHEET) |
| *E3# | | B630Y4D00RP | MEMBRANE SWITCH (U) | 1 | NN-7508L (W/ESCUTCHEON SHEET) |
| *E3# | | B630Y4D00HRP | MEMBRANE SWITCH (U) | 1 | NN-7558L (W/ESCUTCHEON SHEET) |
| *E4 | | B80348660AP | ESCUTCHEON BASE | 1 | NN-5508L, NN-6508L (NOTE 2) |
| *E4 | | B80348660HAP | ESCUTCHEON BASE | 1 | NN-5558L, NN-6558L (NOTE 2) |
| *E4 | | B80348290AP | ESCUTCHEON BASE | 1 | NN-7508L (NOTE 2) |
| *E4 | | B80348290HAP | ESCUTCHEON BASE | 1 | NN-7558L (NOTE 2) |
| *E5 | | B81278640AP | BACK PLATE | 1 | NN-5508L, NN-5558L, NN-6508L, NN-6558L |
| *E5 | | B81278290AP | BACK PLATE | 1 | NN-7508L, NN-7558L |
| *E6# | | B83374D20RP | ESCUTCHEON SHEET | 1 | NN-5508L, NN-6508L |
| *E6# | | B83374D20HRP | ESCUTCHEON SHEET | 1 | NN-5558L, NN-6558L |
| *E6# | | B83374D00RP | ESCUTCHEON SHEET | 1 | NN-7508L |
| *E6# | | B83374D00HRP | ESCUTCHEON SHEET | 1 | NN-7558L |

NOTE 2: Please order Escutcheon Base and Name Plate together.

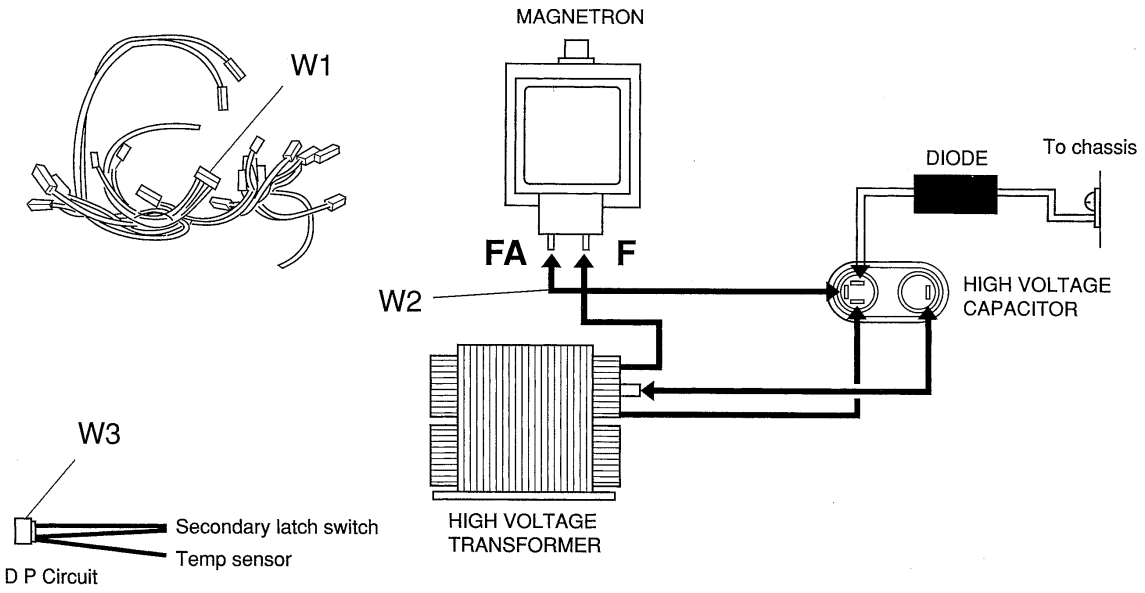
## PACKING AND ACCESSORIES




(S-4D0 RPH)

| Ref.No. | | Part No. | Part Name & Description | Pcs/Set | Remarks |
|---|---|---|---|---|---|
| *P1# | | B00034D20RP | INSTRUCTION MANUAL / SPANISH | 1 | |
| *P2 | | B01068340AP | P.E. BAG | 1 | NN-5508L, NN-5558L |
| *P2 | | B01068290AP | P.E. BAG | 1 | NN-6508L, NN-6558L, NN-7508L, NN-7558L |
| *P3 | | B01075640AP | DOOR SHEET | 1 | NN-5508L, NN-5558L, NN-6508L, NN-6558L |
| *P3 | | B01077000AP | DOOR SHEET | 1 | NN-7508L, NN-7558L |
| *P4 | | B01837220AP | CORRUGATED FILLER / 1.0 | 2 | NN-5508L, NN-5558L |
| *P4 | | B01837050AP | CORRUGATED FILLER / 1.3 | 2 | NN-6508L, NN-6558L |
| *P4 | | B01837000AP | CORRUGATED FILLER / 1.7 | 2 | NN-7508L, NN-7558L |
| *P5# | | B010A4C30AP | PACKING CASE / PAPER / 1.0 | 1 | NN-5508L |
| *P5# | | B010A4C30HAP | PACKING CASE / PAPER / 1.0 | 1 | NN-5558L |
| *P5# | | B010A4B30AP | PACKING CASE / PAPER / 1.3 | 1 | NN-6508L |
| *P5# | | B010A4B30HAP | PACKING CASE / PAPER / 1.3 | 1 | NN-6558L |
| *P5# | | B010A4A20AP | PACKING CASE / PAPER / 1.7 | 1 | NN-7508L |
| *P5# | | B010A4A20HAP | PACKING CASE / PAPER / 1.7 | 1 | NN-7558L |
| *P6 | | B02218260AP | UPPER SUPPORT PACKING / 1.0 | 1 | NN-5508L, NN-5558L |
| *P6 | | B02218310AP | UPPER SUPPORT PACKING /1.3 /1.7 | 1 | NN-6508L, NN-6558L, NN-7508L, NN-7558L |
| *P7# | | B000B9400RP | COOK BOOK | 4 | ALL LT MODELS |
| *P8 | | A06015690QP | COOKING TRAY | 1 | NN-5508L, NN-5558L |
| *P8 | | A06014000AP | COOKING TRAY | 1 | NN-6508L, NN-6558L |
| *P8# | | A06014A00AP | COOKING TRAY | 1 | NN-7508L, NN-7558L |

## WIRING MATERIALS




(S-4D0 RPH)

| Ref.No. | | Part No. | Part Name & Description | Pcs/Set | Remarks |
|---|---|---|---|---|---|
| *W1 | | B030A7600AP | LEAD WIRE HARNESS | 1 | |
| *W2 | | B03508640AP | LEAD WIRE | 1 | |
| *W3 | | B03537050AP | LEAD WIRE | 1 | |

# DIGITAL PROGRAMMER CIRCUIT

## PARTS LIST

Note: Items marked * are supplied by MMOC (MAC) (U.S.A.)
Items marked # are new Part No's. for Pre I.G. (Initial Guidance) list.

| REF No. | PART NO. | DESCRIPTION | QTY | REMARKS | REF No. | PART NO. | DESCRIPTION | QTY | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| BZ1 | AEFB22EP20TL | BUZZER | 1 | 2.0KHZ | JPR1 | ERD25VJ152T | CARBON FILM RESISTOR | 1 | NN-7508L |
| C10 | ECEA1VU471E | ELECTROLYTIC CAPACITOR, AL. | 1 | 470μF/35V/20% | | | | | NN-7558L |
| C11 | ECEA1HU101B | ELECTROLYTIC CAPACITOR, AL. | 1 | 100μF/50V/20% | | | | | 1.5KΩ,1/4W,±5% |
| C13 | ECEA1CKA100B | ELECTROLYTIC CAPACITOR, AL. | 1 | 10μF/16V/20% | JPR1 | ERD25VJ332T | CARBON FILM RESISTOR | 1 | NN-5508L |
| C14,15,21, | AECBT50F103Z | CERAMIC CAPACITOR | 8 | 0.01μF/25V/ | | | | | NN-5558L |
| 22,24,25,26,31 | | | | 20%+80% | | | | | 3.3KΩ,1/4W,±5% |
| C17,28,32 | AECF50F104Z | CERAMIC CAPACITOR | 3 | 0.01μF/50V/ | JPR1 | ERD25VJ683T | CARBON FILM RESISTOR | 1 | NN-6508L, |
| | | | | -20%+80% | | | | | NN-6558L |
| C23 | ECEA1HKA2R2B | ELECTROLYTIC CAPACITOR, AL. | 1 | 2.2μF/50V/20% | | | | | 68KΩ,1/4W,±5% |
| CN1 | AEEMMF01505W | CONNECTOR | 1 | 5PIN | | | | | |
| CN4 | AEEMMF00D04W | CONNECTOR | 1 | 4PIN | | | | | |
| CN5 | AEEM09FDZBTM | CONNECTOR | 1 | | | | | | |
| CX1 | EF0GC4194T4 | CERAMIC RESONATOR | 1 | 4.19MHz | | | | | |
| D10,11 | AESS1N4003E | DIODE, SI | 2 | (1A) | | | | | |
| D12,14,17,19 | MA196-(TA5) | DIODE, SI | 4 | 0.1A | | | | | |
| D13 | MA700-(TA) | DIODE, SI | 1 | (0.03A) | | | | | |
| DISP1*# | AEFR6LT147GN or | | | | | | | | |
| | AEFR06SS17 | FLUORESCENT TUBE | 1 | | | | | | |
| IC1* | AEIC38121421 | L.S.I. | 1 | | | | | | |
| IC2* | AN6752 | IC | 1 | | | | | | |
| Q1 | 2SD2006QRTA | TRANSISTOR, SI, 1.2W | 1 | (120MHZ) | | | | | |
| Q2 | 2SD1991AQSTA | TRANSISTOR, SI, 400MW | 1 | (150MHZ) | | | | | |
| Q6 | UN4211-(TA) | TRANSISTOR, SI, 300MW | 1 | | | | | | |
| R10,11,53 | ERDS2TJ151T | CARBON FILM RESISTOR | 3 | 150Ω1/4W±5% | | | | | |
| R12,24,25 | ERDS2TJ103T | CARBON FILM RESISTOR | 7 | 10KΩ, 1/4W±5% | | | | | |
| 26,28,29,37 | | | | | | | | | |
| R13 | ERDS2TJ472T | CARBON FILM RESISTOR | 1 | 4.7KΩ,1/4W,±5% | | | | | |
| R16,22 | ERDS2TJ102T | CARBON FILM RESISTOR | 2 | 1KΩ, 1/4W, ±5% | | | | | |
| R17,31 | ERDS2TJ332T | CARBON FILM RESISTOR | 2 | 3.3KΩ, 1/4W, ±5% | | | | | |
| R20 | ERDS2TJ333T | CARBON FILM RESISTOR | 1 | 33KΩ, 1/4W, ±5% | | | | | |
| R27,35,51 | ERDS2TJ101T | CARBON FILM RESISTOR | 3 | 100KΩ, 1/4W, ±5% | | | | | |
| R30,38,39, | ERDS2TJ104T | CARBON FILM RESISTOR | 11 | 100KΩ, 1/4W, ±5% | | | | | |
| 41,42,43 | | | | | | | | | |
| 44,45,46,47, | | | | | | | | | |
| 48 | | | | | | | | | |
| R50 | ERDS2TJ2R7T | CARBON FILM RESISTOR | 1 | 2.7Ω, 1/4W, ±5% | | | | | |
| RY1 ⚠ | AEG5J1EM18B | POWER RELAY | 1 | (18V) | | | | | |
| RY2 ⚠ | AEBG5B18P-1 | POWER RELAY | 1 | (18V) | | | | | |
| SP1*# | B82849410AP | DISPLAY HOLDER | 1 | FOR DISPLAY | | | | | |
| T1 ⚠ | A62495500AP | L.V. TRANSFORMER | 1 | ETP35K136A | | | | | |
| Z1 | AEXBM5X104JT | COMPOUND-RESISTOR | 1 | 100KΩX5 | | | | | |
| ZD1,2 | AEDZ5R6ES2T1 | ZENER DIODE,SI | 2 | | | | | | |
| D20# | ERZV10D471CS | VARISTOR | 1 | | | | | | |

### SERVICE FIXTURES AND TOOLS

### EXTENSION CABLES

NOTE: To be used when repairing the DPC board assembly directly on the oven for easy access of the board.

### DPC COMMON CHECKER AND ITS CABLE

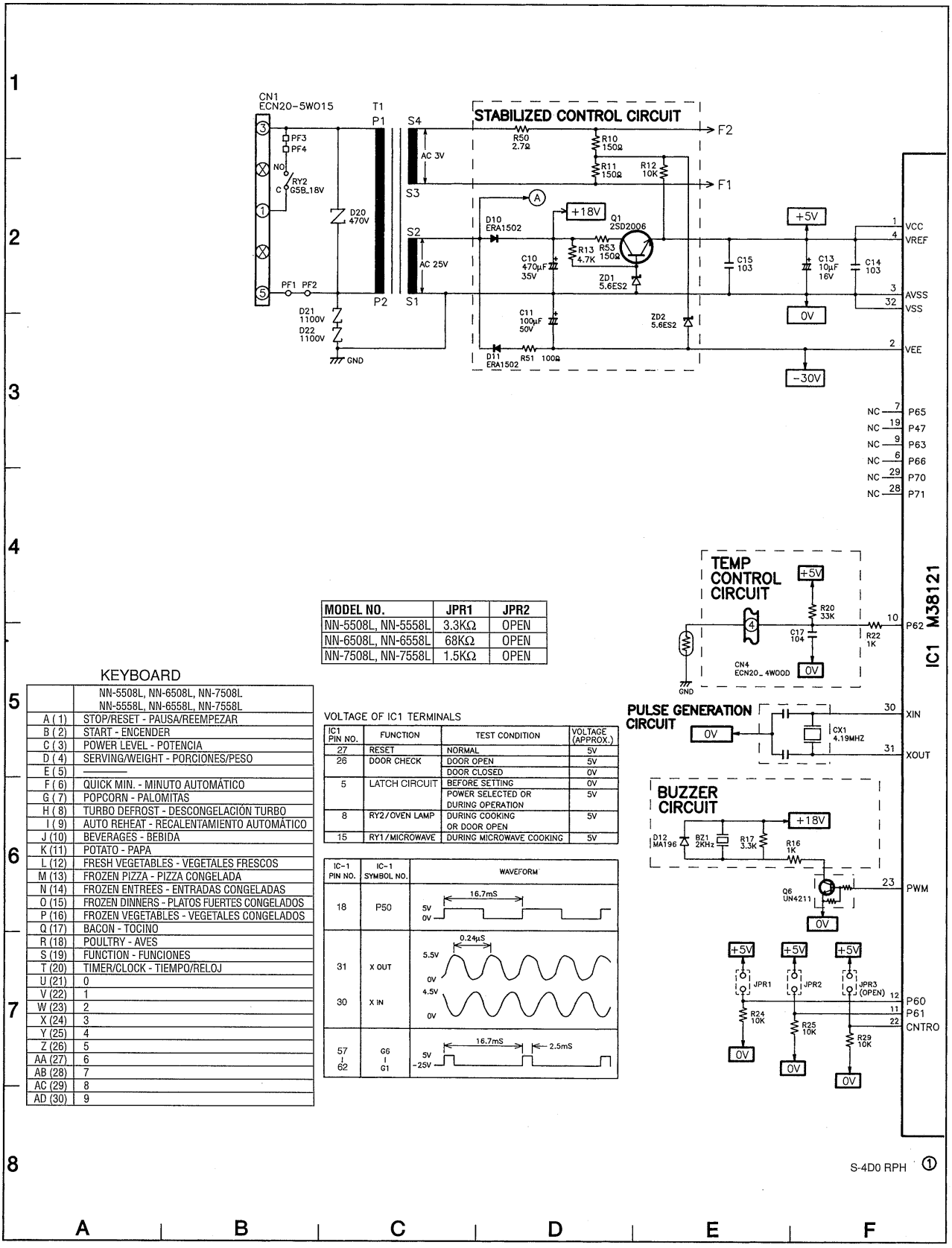
NOTE: To be used only when DPC common checker is available.

| REF No. | PART NO. | DESCRIPTION | QTY | REMARKS | REF No. | PART NO. | DESCRIPTION | QTY | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| | AT40P003 | 3 pin Extension Cable | 1 | Cable No. 48 | | ANE600ZK70AP | DPC. Common Checker | 1 | |
| | AT40P004 | 4 pin Extension Cable | 1 | Cable No. 47 | | AT30A7020AP | DPC. Checker Cable | 1 | NOTE |
| | AT40P005 | 5 pin Extension Cable | 1 | Cable No. 46 | | | | | |
| | AT40E006 | 1 pinX6 Extension Cable | 1 | Cable No. 9 | | | | | |

(S-830RPH)

# DIGITAL PROGRAMMER CIRCUIT (NN-5508L, NN-5558L, NN-6508L, NN-6558L, NN-7508L, NN-7558L)

## SCHEMATIC DIAGRAM




| MODEL NO. | JPR1 | JPR2 |
|---|---|---|
| NN-5508L, NN-5558L | 3.3KΩ | OPEN |
| NN-6508L, NN-6558L | 68KΩ | OPEN |
| NN-7508L, NN-7558L | 1.5KΩ | OPEN |

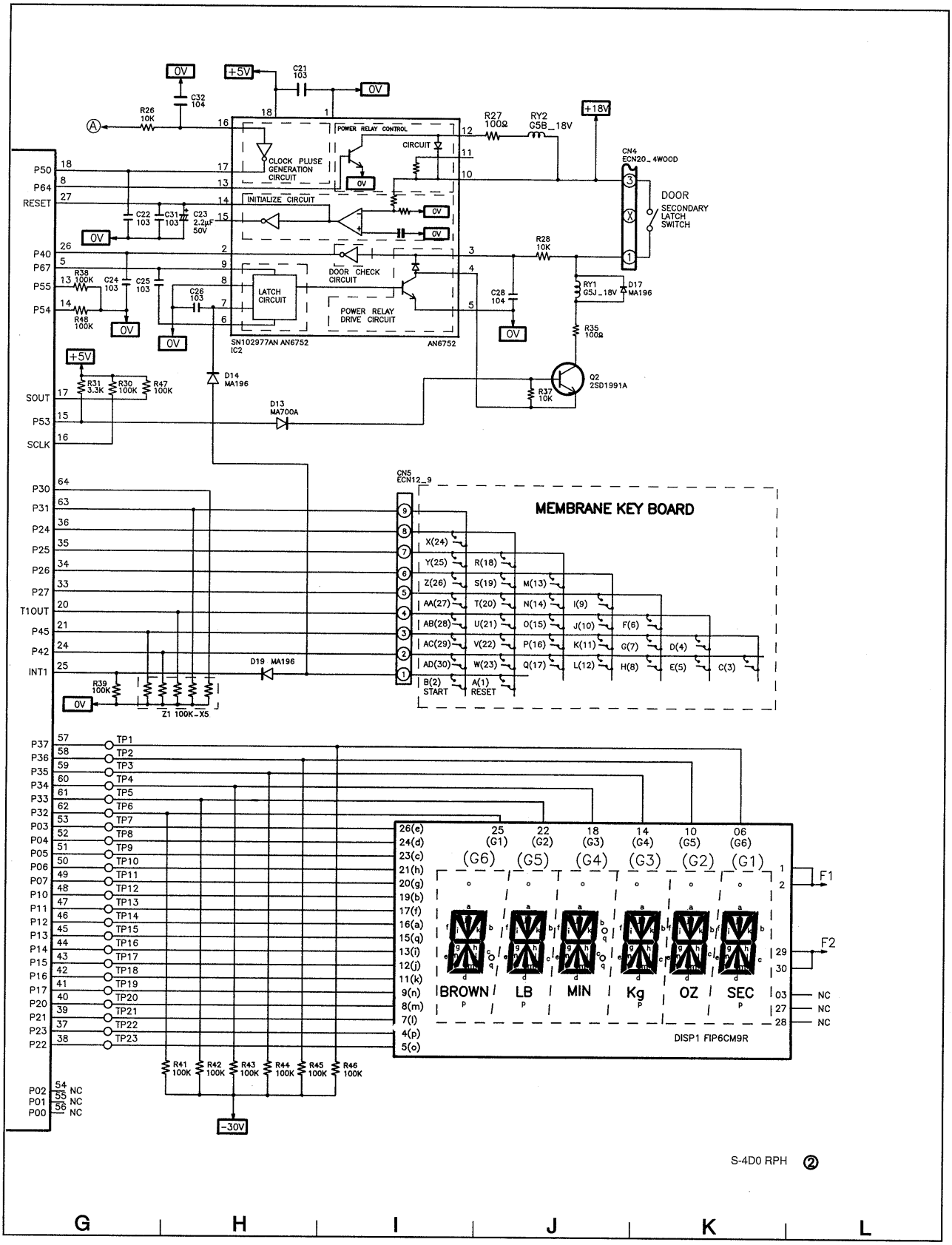
KEYBOARD

| | NN-5508L, NN-6508L, NN-7508L NN-5558L, NN-6558L, NN-7558L |
|---|---|
| A (1) | STOP/RESET - PAUSA/REEMPEZAR |
| B (2) | START - ENCENDER |
| C (3) | POWER LEVEL - POTENCIA |
| D (4) | SERVING/WEIGHT - PORCIONES/PESO |
| E (5) | ——— |
| F (6) | QUICK MIN. - MINUTO AUTOMÁTICO |
| G (7) | POPCORN - PALOMITAS |
| H (8) | TURBO DEFROST - DESCONGELACIÓN TURBO |
| I (9) | AUTO REHEAT - RECALENTAMIENTO AUTOMÁTICO |
| J (10) | BEVERAGES - BEBIDA |
| K (11) | POTATO - PAPA |
| L (12) | FRESH VEGETABLES - VEGETALES FRESCOS |
| M (13) | FROZEN PIZZA - PIZZA CONGELADA |
| N (14) | FROZEN ENTREES - ENTRADAS CONGELADAS |
| O (15) | FROZEN DINNERS - PLATOS FUERTES CONGELADOS |
| P (16) | FROZEN VEGETABLES - VEGETALES CONGELADOS |
| Q (17) | BACON - TOCINO |
| R (18) | POULTRY - AVES |
| S (19) | FUNCTION - FUNCIONES |
| T (20) | TIMER/CLOCK - TIEMPO/RELOJ |
| U (21) | 0 |
| V (22) | 1 |
| W (23) | 2 |
| X (24) | 3 |
| Y (25) | 4 |
| Z (26) | 5 |
| AA (27) | 6 |
| AB (28) | 7 |
| AC (29) | 8 |
| AD (30) | 9 |

VOLTAGE OF IC1 TERMINALS

| IC1 PIN NO. | FUNCTION | TEST CONDITION | VOLTAGE (APPROX.) |
|---|---|---|---|
| 27 | RESET | NORMAL | 5V |
| 26 | DOOR CHECK | DOOR OPEN | 5V |
| | | DOOR CLOSED | 0V |
| 5 | LATCH CIRCUIT | BEFORE SETTING | 0V |
| | | POWER SELECTED OR DURING OPERATION | 5V |
| 8 | RY2/OVEN LAMP | DURING COOKING OR DOOR OPEN | 5V |
| 15 | RY1/MICROWAVE | DURING MICROWAVE COOKING | 5V |

| IC-1 PIN NO. | IC-1 SYMBOL NO. | WAVEFORM |
|---|---|---|
| 18 | P50 | 16.7mS, 5V, 0V |
| 31 | X OUT | 0.24μS, 5.5V, 0V |
| 30 | X IN | 4.5V, 0V |
| 57 I 62 | G6 I G1 | 16.7mS, 2.5mS, 5V, -25V |


0V
+5V
+18V
C21 103
C32 104
R26 10K
POWER RELAY CONTROL
CIRCUIT
CLOCK PLUSE GENERATION CIRCUIT
INITIALIZE CIRCUIT
DOOR CHECK CIRCUIT
LATCH CIRCUIT
POWER RELAY DRIVE CIRCUIT
R27 100Ω
RY2 G5B_18V
CN4 ECN20_4WOOD
DOOR SECONDARY LATCH SWITCH
C22 103
C31 103
C23 2.2μF 50V
R28 10K
R38 100K
C24 103
C25 103
C26 103
C28 104
RY1 G5J_18V
D17 MA196
R48 100K
R35 100Ω
SN102977AN AN6752 IC2
AN6752
Q2 2SD1991A
R37 10K
R31 3.3K
R30 100K
R47 100K
D14 MA196
D13 MA700A
D19 MA196
R39 100K
Z1 100K_X5
CN5 ECN12_9
MEMBRANE KEY BOARD
X(24)
Y(25) R(18)
Z(26) S(19) M(13)
AA(27) T(20) N(14) I(9)
AB(28) U(21) O(15) J(10) F(6)
AC(29) V(22) P(16) K(11) G(7) D(4)
AD(30) W(23) Q(17) L(12) H(8) E(5) C(3)
B(2) START
A(1) RESET
P50
P64
RESET
P40
P67
P55
P54
SOUT
P53
SCLK
P30
P31
P24
P25
P26
P27
T1OUT
P45
P42
INT1
P37
P36
P35
P34
P33
P32
P03
P04
P05
P06
P07
P10
P11
P12
P13
P14
P15
P16
P17
P20
P21
P23
P22
P02
P01
P00
TP1
TP2
TP3
TP4
TP5
TP6
TP7
TP8
TP9
TP10
TP11
TP12
TP13
TP14
TP15
TP16
TP17
TP18
TP19
TP20
TP21
TP22
TP23
NC
R41 100K
R42 100K
R43 100K
R44 100K
R45 100K
R46 100K
-30V
(G6) (G5) (G4) (G3) (G2) (G1)
BROWN
LB
MIN
Kg
OZ
SEC
F1
F2
DISP1 FIP6CM9R
S-4D0 RPH ②